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Improving availability of sweet vegan café and bakery goods by developing supply chain management and collaboration between firms

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AALTO UNIVERSITY ABSTRACT OF MASTER'S THESIS

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Abstract

Sales of plant-based products has increased significantly during the past two years and the sales will continue growing. Also, demand for vegan food products has increased notably. All that *"hype"* around vegan and vegetarian diets has expanded selections of supermarkets and wholesalers, and nowadays plant-based alternatives are widely available. Due to increased interest towards vegan and vegetarian diets, the economic value of plant-based products cannot be underestimated.

The purpose of this thesis is to examine the availability of sweet vegan café and bakery goods in Finland. Also, the study aims to understand the challenges and opportunities related to supply chain of the products. Finally, the study focuses on how to improve the availability by developing supply chain management and collaboration between firms. The thesis is comprised of two separate studies: part I research in which cafés, pastry shops and bakeries were interviewed and part II research focusing on understanding the situation at wholesalers. As an academic background literature review covers supply chain management including the special characteristics of food supply chains.

The findings indicate that the demand for vegan products has increased. However, the availability still varies and thus the study has multiple suggestions for how to improve the availability. The study suggests that the cafés, pastry shops and bakeries should expand their selections to include vegan options. When serving vegan products, the products should be kept on display to increase the demand and to decrease the food waste. Furthermore, the study recommends collaboration between wholesalers and cafés especially in product development process. The cafés should also more often utilize the selections of wholesalers.

Keywords: supply chain management, supply chain, food supply chain, veganism

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Tiivistelmä

Kasvipohjaisten tuotteiden myynti on kasvanut huomattavasti viimeisten kahden vuoden aikana ja myynnin odotetaan edelleen kasvavan. Kaikki tämä *”hypetys”* kasvisruokavalioiden ympärillä on johtanut ruokakauppojen ja tukkujen valikoimien laajentumiseen: nykyään kasvipohjaisia tuotteita onkin laajasti saatavilla. Alati kasvava kiinnostus kasvisruokavalioita kohtaan on nostanut myös kasvipohjaisten tuotteiden taloudellista merkitystä.

Diplomityön tarkoituksena on selvittää vegaanisten kahvila- ja konditoriatuotteiden saatavuutta Suomessa. Tutkimus pyrkii myös ymmärtämään näiden tuotteiden toimitusketjuun liittyviä haasteita ja mahdollisuuksia. Lisäksi tutkimuksessa selvitetään, kuinka saatavuutta voidaan parantaa kehittämällä toimitusketjun hallintaa ja yritysten välistä yhteistyötä. Työ koostuu kahdesta erillisestä tutkimuksesta, joista ensimmäisessä haastateltiin kahviloita, konditorioita ja leipomoita ja toisessa osassa keskityttiin tukkuihin. Työn teoriaosuus käsittelee toimitusketjun hallintaa ja huomioi myös ruuan toimitusketjun ominaispiirteet.

Tulokset osoittavat että vegaanisten tuotteiden kysyntä on kasvanut. Kaikesta huolimatta tuotteiden saatavuus vaihtelee edelleen ja siten tutkimus tarjoaakin useita ehdotuksia saatavuuden parantamiseksi. Tutkimus kehottaa kahviloita, konditorioita ja leipomoita laajentamaan valikoimiaan ja sisällyttämään vegaanisia tuotteita valikoimiinsa. Vegaaniset tuotteet tulisi pitää esillä vitriinissä muiden tuotteiden tavoin, jolloin niiden myyntiä saadaan nostettua ja ruokahävikkiä vähennettyä. Lisäksi työssä suositellaan kahviloille ja tukuille yhteistyötä erityisesti tuotekehitysprosessissa. Kahviloiden kannattaa myös laajemmin hyödyntää tukkujen valikoimia.

Avainsanat: toimitusketjun hallinta, toimitusketju, ruuan toimitusketju, veganismi

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Abbreviations

ASC	Agile supply chain
CSCMP	Council of Supply Chain Management Professionals
DC	Distribution center
HoReCa	Hotels, restaurants, catering
HSC	Hybrid supply chain
JIT	Just-In-Time
LSC	Lean supply chain
PLC	Product life cycle
SCM	Supply chain management
SCO	Supply chain orientation

1 Introduction

Interest towards vegetarian diets has increased significantly during the past years (Craig & Mangels, 2009). Multiple vegetarian diets can be identified but in this study the focus will be on vegan diet, in which no animal products are consumed. However, according to Craig and Mangels (2009) even within vegetarian diets there may appear some variation, but in general, a vegan is a person who does not eat meat, seafood or products containing these foods, eggs, dairy or other products of animal origin.

Awareness of health benefits of plant-based diets as well as ethical and environmental reasons have affected the way consumers think about their food and eating habits and thus more and more consumers choose vegetarian or vegan options at supermarkets. According to Paul & Rana (2012) the popularity of environmentally friendly products is growing, as the consumers are more aware of health and environmental aspects. Agriculture and Agri-Food Canada (2017) has pointed out that meat and dairy consumption have declined in Germany and will keep falling. At the same time the popularity of meat substitutes has increased significantly and so has the amount of vegans and vegetarians as well.

The recent years have changed the selection of vegan food products at supermarkets due to booming veganism in Finland. Not only vegans choose plant-based foods but also omnivores are willing to try new products. Kesko announced last year that the sales of vegan products has increased significantly compared to year 2016 and the sales will continue growing (Kesko press release 9.6.2017). According to Kesko the sales in different plant-based product groups had increased as follows: plant-based drinks +47%, plant-based alternatives to creams +63%, plant-based alternatives to yoghurts +56%, and desserts/puddings +26%. Also, the sales of tofu had grown +13% and the increase in all the vegan frozen products was +41%. The biggest growth, however, was in the hummus and falafel products: the sales had tripled compared to the preceding year.

Due to the increasing interest towards veganism new vegan products have found their ways to the shelves of supermarkets. The amount of new vegan products has exploded during the last couple of years when new and innovative products have been launched. Also, the demand for vegan food products has increased and supermarkets have answered the demand by broadening their selections of plant-based products. Some stores have even organized own shelves for plant-based products to make finding 100 % vegan food easier (Kesko press release 9.6.2017).

During the last year media and newspapers have discussed veganism and its growing popularity and how veganism no longer is a diet of a marginal crowd but a more common diet with an increasing economic value. Even Finnish Nutrition Recommendations 2014 confirm that the dietary habits of Finnish people have changed and Finns nowadays eat more vegetables, fruits and berries than earlier. The recommendations also suggest to reduce the consumption of red meat and processed meat products.

Considering the growing share of vegan food products at supermarkets, there is no data available on vegan café and bakery goods served at cafés, pastry shops and bakeries. Although vegan options are widely available at many cafés and bakeries nowadays, there is no evidence on the availability of these special dietary products in Finland. Thus, the thesis focuses on examining the availability of sweet vegan café and bakery goods in Finland. Especially, the focus will be on supply chain management and supply chain solutions, which bring the academic value for the study. The motivation for the study comes from the growing trend of veganism and is thus worth of further research. Next, the specific research problem will be described more precisely and the research questions will be presented.

1.1 Research problem and research questions

Every firm and organization belongs to a wider network with their customers and suppliers. Since firms are focusing more and more on their core activities, the importance of supply chain management has increased and firms are seen as links in a networked supply chain (Chen & Paulraj, 2004). During the last decades the trend has indicated that the complexity of networks consisting of interdependent organizations is growing (Christopher & Peck, 2004).

In addition, collaboration with other firms is a key for an efficient supply chain (Cao & Zhang, 2011) and establishing even partnerships with suppliers at various levels in the chain is a way to construct more efficient and responsive supply chains (Matopoulos et al., 2007). Thus, collaboration has become a necessity for firms. Also, as stated by Matopoulos et al. (2007) the supply chain contributes firm's success and even the ability to compete is dependent on the collaboration, i.e. how the firm succeeds in the collaboration. Stank et al. (2001) continue that both internal (i.e. intra-organizational) and external (i.e. inter-organizational) integration are needed. When considering the market needs, close collaboration with other firms in the supply chain allows the firm to better respond to market needs as well (Stank et al., 1999). So, it is obvious that firms no longer are isolated entities. Rather they must invest in building efficient networks. As such, collaboration with other firms is a necessity.

Thus, the purpose of this thesis is to examine the availability of sweet vegan café and bakery goods in Finland and are there some common characteristics among the firms that serve vegan options daily when compared to firms that do not serve anything vegan. When it comes to the availability, what are the differences between regions, or are there any? Furthermore, the study aims to understand why some firms have vegan products in their selection while others do not. What is the role of suppliers and wholesalers? Also, the study explores how supply chains are managed and whether there is collaboration between cafés and bakeries or not, especially related to vegan products.

As a result, the study will give propositions on how to develop the availability of sweet vegan café and bakery goods by using the selections of wholesalers and manufacturers. Also, the collaboration between firms will be considered, and whether there is a need to improve the availability of vegan products. Furthermore, any other ways to develop the availability and overcome the challenges related to the availability will be covered.

Since the study focuses on exploring the situation of sweet vegan café and bakery goods, the primary purpose of the study is to understand a real world problem, as suggested by Guest et al. (2013). Thus, the study will contribute the café and bakery business by giving recommendations and propositions on supply chain management and collaboration between firms to develop the availability of sweet vegan café and bakery goods. Also, due to the newness of the topic, the study will contribute the existing theory of supply chain management by bringing insights from the field of café and bakery business. That being said, one of the main purposes is to gain a deep understanding of the topic of the thesis.

Considering the aims of the study the specific research questions (RQs) are the following:

RQ1: How general is the availability of sweet vegan café and bakery goods in Finland and can there be found some common characteristics among firms serving vegan options? Why other firms do not serve vegan alternatives?

RQ2: What are the main challenges and opportunities related to current supply chain of sweet vegan café and bakery goods?

RQ3: How to improve the availability of sweet vegan café and bakery goods by developing supply chain management and collaboration between firms?

The first research question deals with exploring the availability of sweet vegan café and bakery goods and the similarities among the firms either serving vegan options or focusing on a fully vegan selection. Thus, the first research question will contribute the later parts of the study. The second research question is related to challenges and opportunities in supply chain management of vegan products, and thus contributes the final research question with the improvement propositions related to the supply chain management and the availability in general.

More specifically, the research questions are all related to understanding the current situation, the challenges, and the opportunities related to vegan café and bakery goods and their supply and availability. When it comes to business, firms are interested in the possibilities offered by vegan products, and why the firms should focus on this specific product category. What is the importance of vegan café and bakery products for the business? The third research question aims to cover these challenges related to vegan café and bakery goods.

1.2 Limitations

The study focuses on sweet vegan café and bakery goods sold at cafés, pastry shops and bakeries. The café and bakery goods will cover all kinds of sweet pastries, cakes, croissants, muffins, tarts, cookies, anything that is made at the cafés, pastry shops and bakeries or that the cafés buy ready-made from other firms and/or wholesalers. For all that, the study does not aim to cover convenience foods sold at supermarkets as the purpose is to keep the focus on café and bakery goods. Neither will the study cover what kind of goods the cafés, pastry shops and bakeries serve or have available. The interest is only on whether the firms serve vegan options or not.

The study will cover both private firms as well as nationwide chains to see whether there exist any differences between these two types of firms. The firms will represent both small local cafés as well as larger chains. Geographically the research is limited to Finland only. The timeline for the analysis of the availability of sweet vegan café and bakery goods is limited to the situation in fall 2017 and winter 2018. The more detailed history of the availability will not be analyzed.

1.3 Structure of the work

The thesis is organized into three main parts: literature review, part I research and part II research. Literature review consists of two themes, supply chain management in general and food supply chains. Thus, the idea of the literature review is to describe the context of the thesis. Part I research focuses on exploring the availability of sweet vegan café and bakery goods at cafés, pastry shops and bakeries and analyzing the current state of these products. Then, part II research focuses on the situation among wholesalers. The thesis itself is comprised in a following way: first, chapter one includes introduction which discusses the background for the study. Then, chapter two is literature review. Chapter three describes research designs for the part I research and part II research. In chapter four findings from the two research parts are presented and finally chapter five provides discussion and conclusions for the study.

2 Literature review

The purpose of the literature review is to create foundation for the rest of the study by discussing previous studies related to supply chain management. The review has been divided into two main parts. First part will focus on supply chain management in general and give definitions and explanations to better understand the topic of this thesis. In the second part the focus will be on food supply chains and their special characteristics.

2.1 Supply chain management

Supply chain management (SCM) has raised its popularity during the last decades. The term itself has originally been introduced in the early 1980s (Lambert & Cooper, 2000). Especially in the 1990s the organizations started to pay attention to the challenges related to intensive, global markets, and thus the importance of the competitiveness of a whole supply chain was understood (Li et al., 2006). Chen & Paulraj (2004) argue that due to rising international cooperation and vertical disintegration the firms have started to pay more attention to supply chain activities which has allowed the firms to focus more on their core activities.

According to Mentzer et al. (2001) the reasons for the popularity include global sourcing, time and quality-based competition, and environmental uncertainty. The supply chains are global, and thus more efficient ways to coordinate the material flows are needed. As a result, companies have established closer relationships with their suppliers. Furthermore, customers demand increasing product variety, lower costs, better quality, and shorter response times (Vonderembse et al., 2006). Both the globalization as well as the performance-based competition contribute to marketplace uncertainty as does the rapidly changing technology (Mentzer et al., 2001). As such, to be able to become or remain competitive in a globally challenging environment SCM is needed, as SCM integrates suppliers, manufacturers, distributors, and customers across the supply chain and thus the customer needs can be met efficiently (Cooper & Ellram, 1993; Vonderembse et al., 2006).

Cooper & Ellram (1993) position supply chain management between *"fully-vertically-integrated systems and those where channel member operates completely independently"*. In the fully-vertically-integrated systems, the relationships are the strongest, while between independent functions the relationships are more tenuous. Individual businesses are no longer competing as solely autonomous organizations, instead, the competition is ongoing among supply chains (Lambert et al., 1998; Lambert & Cooper, 2000; Li et al., 2006; Vonderembse et al., 2006). Thus, supply chain management is needed to manage and coordinate the multiple businesses and relationships across the supply chain. SCM also provides a valuable way of securing competitive advantage and improving organizational performance (Li et al., 2006). Furthermore, as stated by Lambert & Cooper (2000), by implementing SCM the firms will be offered an opportunity to capture the synergy of intra- and intercompany integration and management.

Multiple definitions can be found for term supply chain management in literature. Council of Supply Chain Management Professionals (CSCMP) defines supply chain management as encompassing *"the planning and management of all activities involved in sourcing and procurement, conversion, and all the logistics management activities"*. CSCMP also includes coordination and collaboration with channel partners in the definition. Stank et al. (1999) continue that SCM is about coordinating operations (source, make, and delivery processes) in collaboration with other supply chain members.

Mentzer et al. (2001, p. 18) provide the following definition: SCM is *"the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole"*. Therefore, SCM encompasses both multiple firms and multiple business activities as well as their coordination. Briefly described supply chain management is about managing the key business processes across the network of organizations among the supply chain (Croxton et al., 2001). Chen & Paulraj (2004) describe a typical supply chain consisting of a network of materials, information, and services. These together hold links between supply, transformation and demand as illustrated in Figure 1.

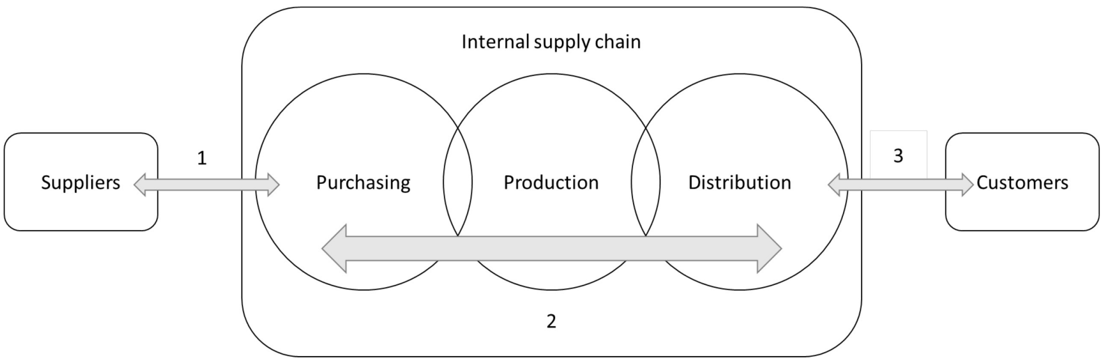

Figure 1. A company's supply chain (Chen & Paulraj, 2004)

According to Cooper et al. (1998) supply chain management is not only about managing the one-to-one, business-to-business relationships across supply chain but a whole network of multiple businesses and relationships. Furthermore, the key business processes become part of supply chain and are linked across intra- and inter-company boundaries. Those processes are then integrated and managed across the supply chain. That being said, Lambert et al. (1998) argue that the ultimate success of a single firm is dependent of the successful integration and management of the key business processes across members of a supply chain.

Despite the plethora of definitions and the popularity of the term, Mentzer et al. (2001) find that there still exists confusion how SCM should be defined. According to Cooper et al. (1997) the concept of SCM has previously been confused with logistics or as an extension of logistics. The original use of the term has broadened to cover not only logistics but also other functions. Besides, as stated by Cooper et al. (1997), supply chain management cannot include only logistics, instead, SCM integrates the business functions and thus goes far beyond logistics.

However, despite the confusion there exist certain similarities around the term SCM: several stages are needed in the implementation of SCM starting from increasing intra- and inter-organizational integration and coordination; many independent organizations are involved; the flow of products and information is bidirectional as are the associated managerial and operational activities too; and finally, the goals related to customer value and building competitive advantage are to be fulfilled (Cooper et al., 1997). In general, the literature finds the ultimate goal of SCM to be satisfying the needs of an end customer (Childerhouse & Towill, 2000). Furthermore, as argued by Stank et al. (1999), by implementing SCM higher levels of service provision and reduced overall cost are enabled.

A conceptual model of SCM introduced by Mentzer et al. (2001) is presented in Figure 2. The model illustrates how all the traditional business functions are included in SCM planning, organization and processes so that supply chain management can be fully utilized. Furthermore, all the supply chain flows are included as well. Finally, the ultimate goals of implementing SCM are described in the model, i.e. lower costs, increased customer value and satisfaction as well as competitive advantage.

The scope of supply chain management is both functional and organizational (Mentzer et al., 2001). The functional scope of SCM includes all the traditional business functions and processes. As such, also logistics is counted as one of the functions, like presented in Figure 2. The organizational scope, therefore, refers to the implementation and process of SCM across three or more companies with supply chain orientation, which is a prerequisite for SCM. Furthermore, the implementation also requires systemic, strategic management of the following activities: integrated behavior; mutually shared information, risks and rewards; cooperation; common goals and focus on customer service; process integration; and partners to build and maintain long-term relationships. Consequently, the supply chain management covers the entire channel (Cooper & Ellram, 1993).

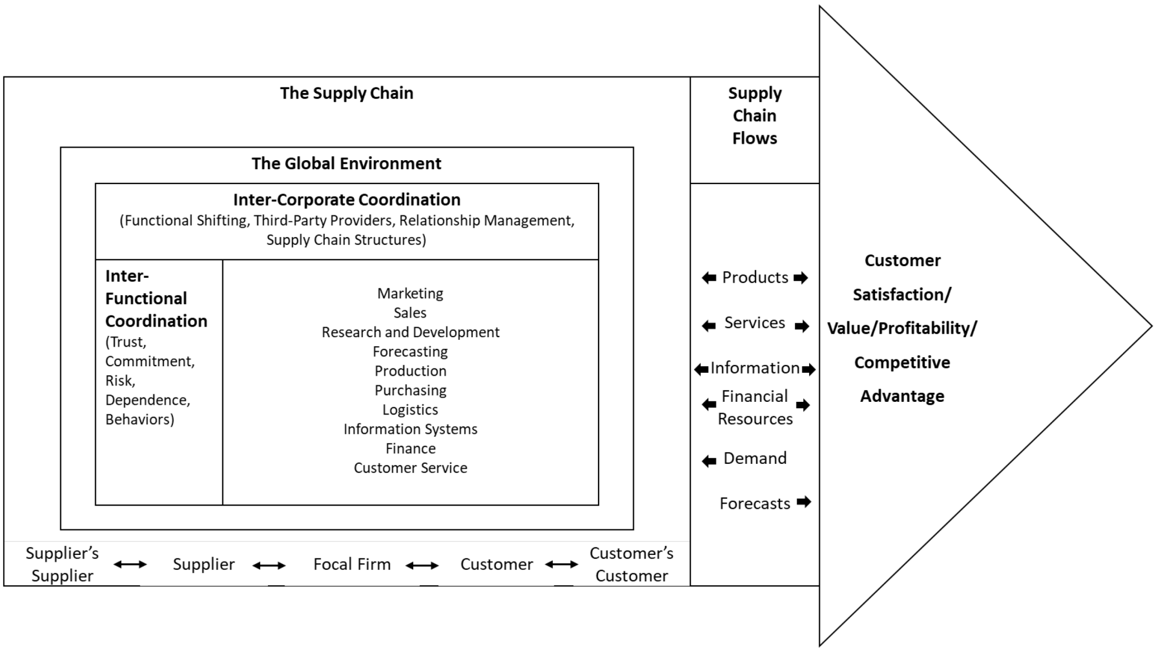

Figure 2. Conceptual model of SCM (Mentzer et al., 2001)

Cooper et al. (1997) define the scope of supply chain in terms of the number of firms included in the supply chain and the functions involved. However, they state that there is a scope issue related to the number of functions and activities to be included in SCM, since different authors have different views on that. As illustrated in Figure 2, Mentzer et al. (2001) involve the cooperative efforts between chain members in areas such as marketing, sales, research and development, forecasting, production, purchasing, logistics, information systems, finance, and customer service. Thus, it is not only logistics that cuts across supply chains, instead, all business processes become part of the supply chain (Cooper et al., 1997). Indeed, in their study Li et al. (2006) found out that higher levels of SCM practice can lead to enhanced competitive advantage and improved organizational performance.

Cooper et al. (1997) provide a framework for supply chain management (Figure 3). The framework consists of three closely related elements: business processes, management components and structure of supply chain. Business processes include all the activities that produce a specific output of value to the customer. The focus in on meeting the customer needs and thus all the functions are organized around these requirements (Cooper & Ellram, 1993). Management components are common across the business processes and the members in the supply chain. The components affect the way the business processes are structured and managed. Finally, the supply chain structure is formed by the firms within the supply chain, as all firms from the raw materials to the ultimate customer belong to the supply chain. However, not all parts of the supply chain need management attention, instead the closeness of the relationship at different points may vary. Indeed, supply chain collaboration requires commitment, and thus it is not reasonable to try to collaborate with a large number of suppliers and customers (Barrat, 2004). Instead, a segmented supply chain approach with collaborative practices with a limited number of suppliers and customers is a more appropriate context for collaboration.

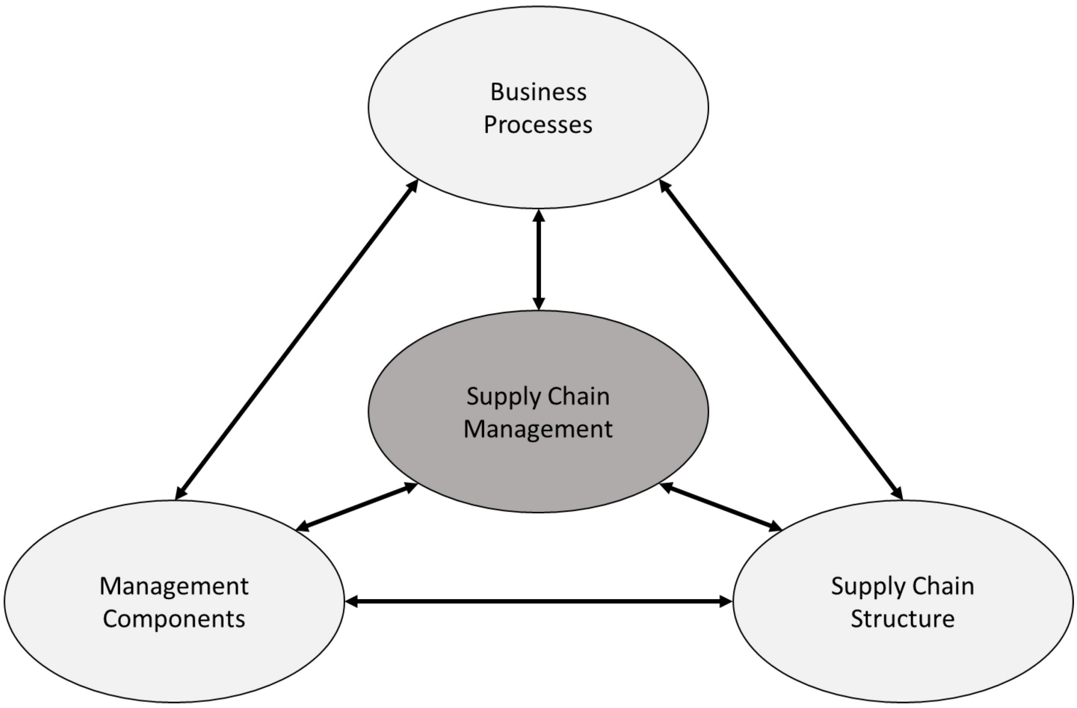

Figure 3. Elements in the framework of SCM (Cooper et al., 1997)

Cooper & Ellram (1993) compare the differences between traditional channel relationships and supply chain management. Their findings, based on literature and discussions with executives, are presented in Table 1. Next, the characteristics of SCM versus traditional channel relationships are shortly described.

Table 1. Comparison of traditional and supply chain management approaches (Cooper & Ellram, 1993)

Element	Traditional	Supply Chain
Inventory management approach	Independent efforts	Joint reduction in channel inventories
Total cost approach	Minimize firm costs	Channel-wide cost efficiencies
Time horizon	Short term	Long term
Amount of information sharing and monitoring	Limited to needs of current transaction	As required for planning and monitoring processes
Amount of coordination of multiple levels in the channel	Single contact for the transaction between channel pairs	Multiple contacts between levels in firms and levels of channel
Joint planning	Transaction-based	On-going
Compatibility of corporate philosophies	Not relevant	Compatible for at least key relationships
Breadth of supplier base	Large to increase competition and spread risk	Small to increase coordination
Channel leadership	Not needed	Needed for coordination focus
Amount of sharing of risks and rewards	Each on its own	Risks and rewards shared over the long term
Speed of operations, information and inventory flows	"Warehouse" orientation (storage, safety stock) Interrupted by barriers to flows; Localized to channel pairs	"DC" orientation (inventory velocity) Interconnecting flows; JIT, Quick Response across the channel

According to Cooper & Ellram (1993) traditionally firms have had their own inventory management policies, but when the supply chain is coordinated and managed, the *inventory management* policy is extended to cover the entire supply chain. This doesn't, however, imply the elimination of all inventories, only the redundant ones. *Total cost approach* refers to a channel-wide evaluation of costs in the supply chain management approach, while in traditional channels each firm focuses on its own costs. As such, the supply chains with lower costs can allocate the savings to other uses, e.g. research and development.

Time horizon typically extends beyond a contract in supply chains, although there can be a fixed contractual time span. In traditional channel relationships the time horizon is short term. *Amount of information sharing and monitoring* is an important aspect in supply chain management: when members have access to the information they need, the entire supply chain can be managed more effectively. Instead, in traditional channels the information sharing is limited only to the needs of a current transaction.

When it comes to *amount of coordination*, Cooper and Ellram (1993) identify three kinds of coordination in a supply chain: across channel members, across management levels and across functions. Thus, there are multiple contacts between levels in firms and between levels of channel, while in traditional channels the focus is on the specific transaction between buyer and seller.

Joint planning is an on-going process in a closely coordinated supply chain involving multiple entities participating the planning process. On the contrary, in loosely coordinated channel relationships the joint planning is very transaction-based and short term. *Compatibility of corporate philosophies* refers to the agreement on the basic directions for the channel. In supply chain management the corporate cultures are compatible at least in key relationships but the compatibility is not relevant for traditional channel relationships.

Traditionally the *supplier base* have been large to increase competition and spread risks but in supply chain management, where the focus is on closer management and coordination, the supplier base is reduced. This enables closer integration between firms. Every supply chain needs a *channel leader* for the development and execution of strategy. Channel leadership is not needed in traditional channel relationships.

Sharing the risks and rewards is a prerequisite for a close relationship, thus all the chain members must be willing to counterbalance the risks and rewards over the long term. The aim is a win-win situation. This is not considered in traditional channels, where the firms are independent and carry their own risks. *Speed of operations, information and inventory flows* is different in traditional systems than in supply chains. Traditionally, there are barriers in the information and inventory flows between firms, thus Cooper and Ellram (1993) characterize the traditional channel operations as having a "warehouse" orientation. In supply chains the information flow across entire channel is emphasized, and therefore a "distribution center" orientation is a more suitable option.

2.1.1 Supply chains

When discussing the supply chain management, it is important to make a difference between the management of a supply chain and the supply chain itself. Mentzer et al. (2001, p. 4) define the supply chain as *"a set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer".* Upstream refers to supply and downstream refers to distribution in the supply chain. Lambert & Cooper (2000, p. 70) define the supply chain as including *"all companies/organizations with whom the focal company interacts directly or indirectly through its suppliers or customers, from point of origin to point of consumption".* So, both of these definitions include all the companies from the source to the consumption in the supply chain.

Three degrees of supply chain complexity can be identified (Mentzer et al., 2001): a direct supply chain, an extended supply chain and an ultimate supply chain, as illustrated in Figures 4, 5 and 6. The direct supply chain is the most straightforward supply chain consisting only of a company, a supplier and a customer. The extended supply chain differs from the former so that also suppliers of the immediate supplier and customers of the immediate customer are included in the chain. Finally, in the ultimate supply chain all the organizations involved in all the upstream and downstream flows (i.e. flows of products, services, finances and information) from the ultimate supplier to the ultimate customer are included in the chain.

Figure 4. Direct supply chain (Mentzer et al., 2001)

Figure 5. Extended supply chain (Mentzer et al., 2001)

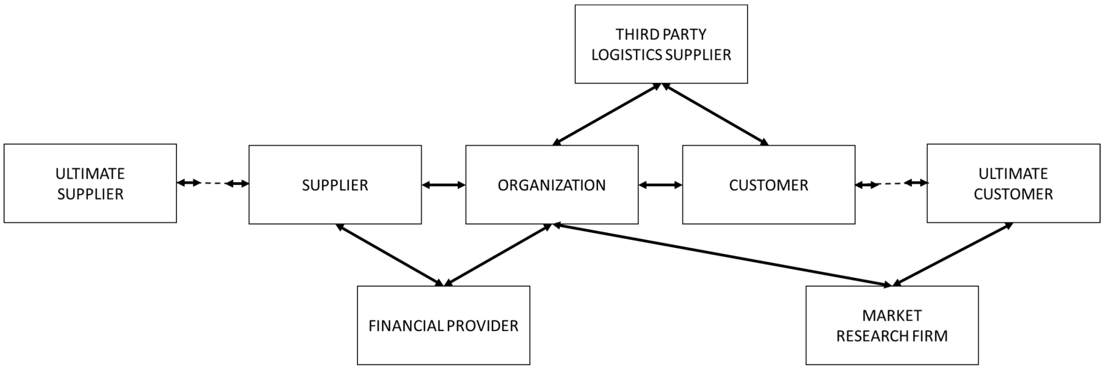

Figure 6. Ultimate supply chain (Mentzer et al., 2001)

As it is obvious, numerous different supply chain alternatives are possible and those presented in Figures 4, 5 and 6 are just simplified examples of the countless alternatives. Every single company participates in a supply chain (Lambert & Cooper, 2000; Christopher & Peck, 2004), indeed, typically any one organization belongs to numerous supply chains (Mentzer et al., 2001). Moreover, the roles can vary from chain to chain, e.g. a same company can be a customer in one chain, a supplier in another, or it can be a partner or even a competitor in other chains. Another aspect related to supply chains is that they always exist, no matter are they managed or not. Thus, as described by Mentzer et al. (2001) supply chain is a phenomenon that always exists in business. Also, as stated by Lambert & Cooper (2000), the supply chain consists of a network of multiple businesses and relationships, not only business-to-business relationships.

Although there are countless of possible supply chain variations, each company views the membership and the network structure differently, as the management of each company sees its firm as the focal company in the supply chain (Lambert & Cooper, 2000). In addition the supply chain network consists of following structural dimensions: horizontal structure (i.e. the number of tiers across the supply chain), vertical structure (i.e. the number of suppliers and customers within each tier), and the company's horizontal position within the supply chain. It is also worth noticing that supply chains are rarely linear, indeed, they are complex networks with products and information flows within and between supply chain members (Christopher & Peck, 2004).

The management of a supply chain depends on the complexity of the product, the number of available suppliers and the availability of raw materials (Lambert & Cooper, 2000), thus every supply chain is unique and there is no common solution for the management. Typically the supply chain can be illustrated as an uprooted tree with the branches and roots presenting the network of customers and suppliers (Lambert & Cooper, 2000; Cooper et al., 1997). Not all branches and roots need the management attention, therefore the different links throughout the supply chain must be considered separately. According to Lambert & Cooper (2000) the network structure consists of the members of the supply chain, the structural dimensions of the networks and the different types of process links across the supply chain.

Lambert & Cooper (2000) make a difference between primary and supporting members in the supply chain. They define primary members to be those who add value to the specific output for a customer or market, and they can be independent companies or strategic business units. On the contrary, the supporting members are companies providing resources, knowledge, utilities or assets for the primary members of the supply chain.

2.1.2 Supply chain types

Three different supply chain types can be recognized: (1) lean supply chain, (2) agile supply chain and (3) hybrid supply chain (Vonderembse et al., 2006). Which supply chain type is the most appropriate for a certain supply chain depends on the product, since the chosen type must be in accordance with the needs of the product and its customers. The products, in turn, can be categorized into standard, innovative and hybrid products (Vonderembse et al., 2006). Standard products are stable with incremental design changes. They have long life cycles and the demand can be forecasted accurately. Innovative products, instead, are new products with typically a totally different concept and design and the focus is on fulfilling the emerging customer needs. Life cycle of an innovative product is relatively short. Hybrid products have characteristics of both standard and innovative products. Typically they are more complex products with innovations occurring at the module or component level. Their life cycles are long.

According to Vonderembse et al. (2006) the supply chain types involve multiple distinct characteristics that separate them from each other. Lean supply chain (LSC) focuses on continuous improvement by eliminating waste or non-value adding steps in the supply chain. Although setup times are reduced to be able to produce small quantities economically and to increase internal flexibility, the ability to meet future market requirements may be lacking. The LSC is most appropriate for already available standard products with relatively long life cycle times (>2 years). Mass customization is not possible and the LSC works on confirmed orders and reliable forecasts. Market focus is on current market segments.

Agile supply chain (ASC) relates to the interface between companies and markets (Vonderembse et al., 2006). One of the main differences compared to LSC is the ability to respond rapidly changing global markets, as the ASC is characterized by being dynamic, context-specific, aggressively changing and growth oriented. Moreover, the ASC is adaptable to varying customer requirements and future changes. Due to agile manufacturing the products can be customized, and thus the ASC is appropriate for innovative products with short life cycle times (3 months to 1 year) with unpredictable demand.

The third type of supply chain is a combination of lean and agile: a hybrid supply chain (HSC), as described by Vonderembse et al. (2006). The products in the HSC are typically "assemble to order" products which are in the maturity phase of their life cycle. Demand can be reliably forecasted. Modular design is used to allow postponing the product differentiation until final assembly. Thus, lean is used in component production and agile supply chain for understanding the customer needs and future changes.

2.1.3 Supply chain orientation

Before companies in the supply chain can implement supply chain management, they must first have supply chain orientation (SCO). Mentzer et al. (2001, p. 11) define SCO as *"the recognition by an organization of the systemic, strategic implications of the tactical activities involved in managing the various flows in a supply chain"*. As the authors state the SCO requires that a company's management sees implications of managing both the upstream and downstream flows of products, services, finances and information across their suppliers and customers. Otherwise, the company doesn't have SCO, e.g. if there are implications only in one direction. Also, it is not enough that only one company in the supply chain implements SCO, instead, several companies in the supply chain are required to implement SCO. If there is only one firm possessing SCO, it can only implement individual supply chain tactics, but supply chain management cannot be spoken. Furthermore, as the authors continue, SCM actually is the implementation of SCO across suppliers and customers.

Supply chain orientation can be seen as a management philosophy, whereas supply chain management is the management actions undertaken to realize that philosophy (Mentzer et al., 2001). SCM requires that the companies willing to implement the management actions must pay attention to certain factors that either enhance or impede the implementation of SCO philosophy as typically the relationships in a supply chain are long-term. The factors include trust, commitment and mutual dependence of a partner organization (interdependence). Trust and commitment are related to cooperative behaviors, when implementing SCO and thus help achieving SCM. Moreover, interdependence is positively related to long-term relationships. Other factors include organizational compatibility (i.e. common goals and objectives and similarity in operating philosophies and corporate cultures) which affects positively the efficiency of the relationship and a common agreement on SCM vision and key processes shared by the whole supply chain. There also needs to be a leader in the supply chain, i.e. a firm that coordinates the whole supply chain and stimulates cooperative behavior across the chain. Finally, top management support is needed to the implementation of SCM.

As such, it is clear that the implementation of supply chain management requires at least some level of coordination across organizational boundaries (Cooper et al., 1997). Typically this means integration of processes and functions within organizations and across the supply chain. Furthermore, the firms will be tied together through the organizational relationships and so their success may be tied to the chain as a whole as well.

The reasons why companies pursue the formation of supply chain arrangement are lower costs, improved customer value and satisfaction as well competitive advantage (Li et al., 2006; Mentzer et al., 2001). More precisely, when firms in a supply chain implement SCM, typically a chain reaction happens: first, the implementation of SCM enhances customer value and satisfaction as a result of synchronized management of the flow of physical goods and associated information in the chain; second, the improved customer value leads to enhanced competitive advantage for the supply chain and the members in the chain; thirds, both improved customer value and competitive advantage affect the profitability.

2.2 Food supply chain

Food industry is a dynamic environment where food safety and sustainably produced foods are key aspects among customers nowadays (Beske et al., 2014). Rapidly changing customer requirements are typical to the industry. Thus, companies need to have the ability to quickly respond to these constantly changing requirements by adapting strategies and reconfiguring resources. Other issues related to especially food industry according to Beske et al. (2014) are quality, the origin of the inputs, the labor standards, the treatment of animals as well as the environmental impact.

2.2.1 Special characteristics of food supply chains

Yu & Nagurney (2013) describe food supply chains being complex, global networks. Furthermore, when discussing food supply chains in general, the demand of fresh food products and the fresh produce is growing. One of the main differences compared to other supply chains is the continuous and significant change in the quality of food products throughout the supply chain (Yu & Nagurney, 2013). Moreover, the high perishability and hence the food waste are also typical characteristics in food supply chain.

When paying attention to SCM of food supply chains, there are certain aspects that need to be considered. According to Bourlakis & Weightman (2004) food supply chain plays a significant role in every national economy. The food chain consists of agriculture, food manufacturing, food and drink wholesaling and retailing as well as the food catering and service sector. In the chain all the sectors are crucial but the role of the food manufacturing sector is vital since it acts as a link between producers and retailers and thus affects the quality determined by a customer. Despite the importance of the food manufacturing sector, each sector is dependent on other sectors.

In the food supply chain it is the food manufacturing sector that adds value to food product ingredients so that they will meet the requirements of other supply chain members (Bourlakis & Weightman, 2004). Popularity of ready-to-eat meals has increased as consumers are spending less time on purchasing, preparing, cooking and consuming their food (Fearne & Hughes, 1999). This has strengthened the importance of food manufacturing sector while decreasing the importance of farmers who are seen as producers of low-priced raw materials.

The next stages after food manufacturing are retailing, wholesaling and catering. All these sectors have their own special characteristics (Bourlakis & Weightman, 2004). In the retailing firms interact with final consumers, in wholesaling customer base consists of business customers and in catering the customer base consists of both business and final consumers. The customer base is a key here, since the type of the customer base affects the strategies and operations of the firms. Retailers communicate with their customers through a store network and branding plays a vital role, while wholesalers focus on product availability. The catering sector is different, since it consists of a network of restaurants and other food service actors that serve the final customer.

In the food supply chain the consumer determines how the food market flourishes, therefore the role of the end consumer is significant. The ultimate purpose of the food supply chain is to deliver what the end customer wants, and thus the goal is similar to every supply chain, i.e. fulfilling customer requirements. According to Stank et al. (1999) integrated supply chain management is related to improved performance in customer service areas. Hence, information flow between supply chain members affects the ability to respond the ultimate customer requirements.

In the food industry the product life cycles are typically long and the demand can be accurately forecasted. However, because many products are perishable, the shelf life is limited and in many cases relatively short. Thus, the supply chain members need to respond quickly (Childerhouse & Towill, 2000). The food perishability adds complexity and calls for efficient supply chain management (Yu & Nagurney, 2013).

2.2.2 The consumer

The consumer’s role in the food industry is significant, since the food decisions individual consumers make affect the whole industry. The success or failure of food products is dependent of those decisions. Furthermore, the food marketplace is consumer-driven, and thus in the US food system the consumers are the most important segment (Asp, 1999).

There are multiple factors affecting the consumer food choices, as identified by Asp (1999). Cultural factors relate to food habits, which are continually changing due to travel, immigration and other socio-economic factors. Psychological factors, on the other hand, are strongly related to what an individual eats and include factors such as food preferences, food likes and dislikes. Lifestyle factors have raised the importance during the last years and they often express identity. Finally, food trends also have an effect on the food choices.

Bourlakis & Weightman (2004) name factors affecting the consumer choice, too. According to them the consumer decision-making is affected by political, economic, social and technological factors and is typically shaped by cultural, social and personal characteristics. Also, the food itself affects the food choice in a way what are the physical and chemical properties of the food and what is the nutrition content. Moreover, availability has a significant effect on the consumer choice as well. There are multiple factors behind the availability including physical, economic and political elements (Bourlakis & Weightman, 2004). The decisions related to the availability are made in the food supply chain, although consumers have the power to drive the change in the food industry.

Understanding the characteristics of different groups of consumers with similar wants and needs is important for supply chains, and thus market segmentation is part of understanding the consumers and their behavior. When it comes to consumer food choices, the following segments can be identified (Bourlakis & Weightman, 2004):

1. The uninvolved food consumer
2. The careless food consumer
3. The conservative food consumer
4. The rational food consumer
5. The adventurous food consumer

According to Bourlakis & Weightman (2004) one third of the UK population react to food rationally and process a great amount of information while shopping. On the other hand, one fourth of the UK population can be called careless food consumers, for whom the food is not very important. The other segments can be set in the following order: the conservative food consumer (19 %), the adventurous food consumer (12 %), and the uninvolved food consumer (9 %). Hence, most people are at some level interested in what they eat and usually food has a notable role in live.

Based on the level of consumer involvement and the differences across brands, Bourlakis & Weightman (2004) have identified four different types of buying decision. These four types can be divided into high involvement and low involvement decisions. The high involvement types of buying include *complex buying behavior* related to expensive, risky, self-expressive and infrequently purchased goods, and *dissonance-reducing buying behavior* in which the product itself is important, not the brand.

In turn, the low involvement types of buying encompass *variety-seeking behavior* with only little brand loyalty, and *habitual buying behavior*, which is related to frequently purchased, low cost products. Typically food is seen as a low involvement product (Bourlakis & Weightman, 2004), as it is purchased frequently and most of the food purchases are habitual. However, it is obvious that food evokes strong emotions among people, thus in some occasions food can be seen as a high involvement product.

2.3 Summary of literature review

The importance of supply chain management has increased during the last decades. The reasons are diverse including e.g. international collaboration and vertical disintegration. Especially the globalization has affected the competition, and thus firms have put more efforts on building supply chains. This has allowed the firms to focus on their core activities. Globalization has also affected material and information flows and SCM has provided a solution for efficiently manage both flows. As such, the competition is now ongoing between supply chains instead of individual organizations.

Customers have become more conscious about what they want and they demand for product quality and variety, lower costs as well as shorter response times for which the SCM is an answer (Cooper & Ellram, 1993; Vonderembse et al., 2006). Indeed, the ultimate goal and purpose of implementing supply chain management activities is to fulfill the needs of an end customer (Childerhouse & Towill, 2000). However, there are also other reasons behind the implementation. According to Mentzer et al. (2001) the reasons include lower costs, increased customer value and satisfaction as well as competitive advantage. Moreover, the overall costs can be reduced and at the same time SCM allows higher levels of service provision (Stank et al., 1999).

Since the competition has changed from individual organizations to supply chains, the success of supply chain directly affects the supply chain members' performance. It is important to notice that every single organization is part of a supply chain and that supply chains always exist, no matter how they are managed. Although each supply chain is unique, there are certain factors that affect how to best manage the supply chain. These factors include the complexity of a product, the number of available suppliers and the availability of raw materials (Lambert & Cooper, 2000).

Food supply chains differ from other supply chains in a way that food industry is a dynamic environment with rapidly changing customer needs. Furthermore, the quality of food products changes across the food chain which brings own challenges for supply chain management. Also, the food products are perishable with limited shelf lives, and thus food waste is almost inevitable to some extent (Yu & Nagurney, 2013). Therefore, efficient supply chain management activities are necessary to ensure quick response among the supply chain members (Childerhouse & Towill, 2000).

The consumer food choices play a key role in the food industry since the industry is consumer-driven (Asp, 1999). There are multiple reasons behind the choices consumers make but one of the factors is lifestyle. According to Asp (1999) the lifestyle factors have raised the importance and they often express identity. Furthermore, food trends also affect the choices made by consumers. Thus, it is obvious that food is not only a low involvement product, instead it can sometimes have a more significant role in life.

The food supply chain literature applied in this study focuses mostly on perishable foods/fresh produce (Yu & Nagurney, 2013; Fearne & Hughes, 1999) or organic food products (Paul & Rana, 2012). Thus, a need for more understanding about supply chains among cafés, bakeries and wholesalers is needed. Veganism is a new research area for SCM and therefore in this particular study SCM literature related directly to vegan foods was not available. However, since vegan food products can be thought as conventional products when it comes to supply chain management, the SCM literature related to conventional products was available.

The literature review contributes the study in multiple ways: first, the literature emphasizes the importance of supply chain management and the positive impacts of supply chains to the individual companies. Second, the food industry is very much consumer-driven, and thus supply chains bring more opportunities for individual companies to succeed. Third, since the literature is lacking the café and bakery aspect, this study will take that into account without forgetting the increasing value of veganism. Although the literature points out certain topics, e.g. lifestyle factors, vegan lifestyle has not been mentioned in any particular way. Thus, the literature provides possibilities to continue the study of how the availability of vegan café and bakery products could be improved by developing supply chain management.

3 Research design

Next, research methods used in this study will be introduced. The methods will include case selection, data collection and data analysis methods. Furthermore, the reasons why exact methods were chosen will also be discussed. First, the research methods of the study in general will be discussed and then the specific methods used in part I research and in part II research will be presented.

3.1 Research methods

In Finland no studies had focused on examining the availability of vegan café and bakery goods (or vegan food products in general) nor their supply chains. Because little was known about the topic in the beginning of the study, exploratory nature was required (Guest et al., 2013). Although the topic itself was new, existing literature could be utilized. Exploratory research was especially applicable to the study, since it allowed to focus on understanding the deepest essence of the topic, particularly when the primary purpose was to gain a deep understanding of a real world problem and to be able to give suggestions for improving the availability of sweet vegan café and bakery goods by developing supply chain management and collaboration.

The study was conducted as a qualitative research, since it allows achieving more detailed descriptions and explanations about the research topic (Guest et al., 2013). Other advantages related to a qualitative research design according to Guest et al. (2013) are inductive and flexible nature of qualitative research, iterative approach, accessing information not otherwise available (especially when using open-ended questions) and a possibility of documenting causal relationships.

Due to the newness of the topic, the research process started with only broad research questions. The preliminary questions were related to the availability of sweet vegan café and bakery goods, supply chain management, collaboration in supply chain networks as well as purchasing vegan products. After having formulated the preliminary research questions part I research was conducted in which the aim was to familiarize oneself with the availability of sweet vegan café and bakery goods and to understand the current situation on the field. In the part I research the present state was described and analyzed as well as the fundamental problems and challenges were identified.

After the part I research the final research questions were formulated and the study continued with a framework building process. The framework was based on supply chain management literature. Then, the third phase consisted of conducting the part II research which focused on exploring the availability of sweet vegan café and bakery goods at wholesalers. Finally, in the fourth phase supply chain solutions based on literature were developed and evaluated.

3.2 Part I research

Next, conducting the part I research will be explained and discussed. The research methods will be introduced.

3.2.1 Case selection

The study focused on describing and analyzing supply chains of sweet vegan café and bakery goods, thus the unit of analysis (Singleton & Straits, 2005) was the supply chains. For that purpose it was necessary to include multiple firms selling vegan café and bakery goods in the study. In this study the focus was on cafés, pastry shops and bakeries as they sell pastries and baked goods that are of interest of the study. The firms for the study were selected by using an information oriented selection in order to maximize the amount of information to be utilized (Flyvbjerg, 2006).

The part I research began by identifying the cafés, pastry shops and bakeries to be contacted. Preliminary information about the firms was searched online and the selected firms represented a heterogeneous sample with variation in geographical location, firm type (e.g. café, bakery, pastry shop, catering) and firm size. Also, attention was paid to any other possible differences and specialties within the selected firms, e.g. if a firm had specialized in vegan products.

The firms were chosen so that they represented a large variety of different types of cafés, bakeries and pastry shops: there were more traditional firms as well as those who had focused on vegan or vegetarian products or were otherwise specialized in some diets and/or products. Furthermore, the firms represented bigger and smaller local firms as well as larger nationwide chains. Geographically the firms covered Finland from south to north and from west to east, so that the whole area of Finland was taken into account.

Altogether 52 firms participated the part I research. Table 2 lists the locations of the firms. Especially in smaller towns there were only one or two cafés and/or bakeries to be contacted, thus the exact names of the towns are not published to keep the firms anonymous. Instead, the firms are listed by regions.

Table 2. Participating firms listed by regions

Region	**Number of firms**
Helsinki metropolitan area	14
Southern Finland	15
Eastern/Western/Central Finland	7
Northern Finland	16
Total	**52**

The participating firms were mostly cafés, pastry shops and bakeries. Many cafés also provided catering services, breakfast, lunch, as well as cakes made to order. Two coffee chains were also included in the study. In Table 3 the different services the firms offered are listed. Serving cakes and other pastries made to order has included in catering services.

Table 3. Services the firms offer

Service	**Number of firms**
Café (no other services)	17

Café, lunch, catering	10
Café, bakery, pastry shop, catering	15
Café, restaurant	2
Bakery	6
Coffee chain	2
Total	**52**

3.2.2 Data collection

The data was collected by using semi-structured interviews. The interviews were arranged by phone and, if needed, emails were used as well. Contacting the firms by phone was the most common way to interview, as the firms were located all over Finland. Since the chosen cafés and bakeries represented two main types of firms: (1) firms with a traditional selection and (2) firms focusing on vegan products, two types of interview protocols were created (see appendices 1 and 2).

Altogether there were around 60 cafés, pastry shops and bakeries that were contacted but eventually 52 of them were interviewed, since not all the 60 firms had time and/or interest to participate the study. 47 interviews were conducted by phone, 3 interviews by email (with first contacts by phone) and two cafés were visited, and thus there were two face-to-face interviews. The interviews were conducted in December 2017 and only one person per firm was interviewed due to time and resource limitations. The interviews were all held in Finnish.

Before contacting each firm information was searched online to familiarize oneself with the firm and to be able to choose the right interview protocol. When calling the more traditional cafés and bakeries, the interview protocol provided in Appendix 1 was chosen. The questions in the protocol were related to the availability and selection of sweet vegan café and bakery goods, demand, allergies and special dietary requirements as well as food waste and selection in general. When calling places that had focused mostly on vegan and/or vegetarian food, the interview protocol provided in Appendix 2 was chosen. The interview questions were slightly different than in the first protocol: the first questions emphasized the selection and what were the reasons for having fully or almost vegan selection. Otherwise the interviews continued in a similar way.

3.2.3 Data analysis

During the interviews notes were taken but the interviews were not recorded or transcribed, since the main objective of the part I research was to understand the present state of the sweet vegan café and bakery goods. Thus, there was no need to record and transcribe the interviews. Also, it was a matter of time and resources and the idea was that this phase of the research would cover a large quantity of different firms around Finland.

Most of the interviews were held by phone, so during the interviews notes were taken on interview protocol. Right after each interview the answers were completed. There were couple of firms who wanted to answer the questions by email. Those answers were then added to the interview protocols afterwards. However, in some cases not all answers were gotten and then those questions were left empty. When visiting the two cafés it was also possible to observe the way the café operated, the selection, how they took into account different customers etc. The observations supported the interview answers.

After having completed all the 52 interviews the answers were then added to an Excel template for further analysis. Each firm was listed on the left and their answers were then listed on the same row. To be able to analyze the answers the answers were modified so that they had similar words for filtering. Following information was taken on the template: location, services the firm offered, availability of vegan products, making of vegan products (by the firm itself or ready-made), demand for vegan products, possible changes in the demand, how the demand affected the selection of vegan options, availability of special dietary products, management of food waste, and factors affecting the selection.

3.3 Part II research

The research methods used in part II research will next be introduced. The part II research focused on examining the availability of sweet vegan café and bakery goods at wholesalers and the main challenges and opportunities related to supply chain of vegan products.

3.3.1 Case selection

Since the aim of the part II research was to examine the situation of sweet vegan café and bakery goods at wholesalers, the first step was to decide which wholesalers to be contacted. Thus, the part II research began by getting acquainted with the foodservice wholesalers operating in Finland. Other criterion was that the wholesaler's operations covered the whole country. Firm size, number of employees, revenue or any other figures were not criteria for the firms. As such, information oriented selection was used (Flyvbjerg, 2006) to ensure the amount of relevant information.

After having set the certain criteria for the wholesalers five firms were selected to be contacted and they all participated the study as well. These five wholesalers all operate in the foodservice sector and their product selections include e.g. fresh and frozen foods, processed foods, beverages and non-food products. They are all nationwide firms covering the whole of Finland. Their customers cover a large variety of foodservice professionals, including restaurants, hotels, catering, cafés and public sector.

3.3.2 Data collection

An interview protocol was created for the wholesalers (see Appendix 3). The idea of the interview questions was to collect information related to cafés as customers, how do the wholesalers design and plan the product selection, demand for vegan products as well as the availability and marketing of vegan products. Furthermore, some questions aimed at understanding the characteristics of supply chain of cakes and other sweet pastries and whether there were special characteristics or not. All in all, to better understand the current situation in the field the interviewees were allowed to openly tell about each subject before continuing with more specified questions, thus semi-structured interview protocol was used.

All the interviews were arranged by phone. Altogether six interviews were arranged in which seven wholesaling professionals were interviewed, as there was one interview with two interviewees. The interviews took approximately 30 minutes and most of them were scheduled in advance. In general there was one interview with each firm, but since one of the participating firms had different regional locations, two interviews were held with the firm. All the interviews were arranged in March 2018 and all the interviews were held in Finnish.

3.3.3 Data analysis

Since the interviews were held by phone, notes were taken during the interviews. However, like in the analysis of part I research, neither were these interviews recorded nor transcribed. Again, the main goal was to understand the current situation of vegan products at wholesalers and especially, how cafés used the selections of the wholesalers. Also, due to limitations in time and resources, there was no need to transcribe the interviews. The notes were taken directly to the interview protocol and the notes were then completed after each interview.

When all the interviews were completed, it was time to collect the answers to an Excel template, similar to the template used in the part I research. The wholesalers were listed on the left and their answers were then listed on the same row with each firm. Because the number of the participating firms was only five with six separate interviews, there was no need to modify the answers for filtering. The information was collected on the template by themes to make the analysis of the answers possible and to allow the comparison of the answers.

The themes were categorized according to the interview protocol under seven categories: customer base, selection, demand for vegan products, availability of vegan products, supply chain of cakes, order fulfillment of coffee chains, and marketing of vegan products. The categorization enabled to map the key findings of the interviews and to understand the key elements of the themes. Also, reviewing the interviews by themes enabled to compare the findings with the part I research. The idea was to find similarities and differences among the answers of wholesalers and cafés.

Finally, the propositions on how to develop the availability of sweet vegan café and bakery goods at cafés, pastry shops, bakeries and wholesalers were developed. The propositions on how to develop the supply were based on literature and the findings of part I and part II research. Thus, an iterative approach was used in the development process as suggested by Guest et al. (2013). Indeed, the propositions were developed all the way from the part I research and the literature review to the part II research. As such, the literature and the findings were combined all the time during the study to develop the propositions for the solutions.

4 Findings

Empirical findings from part I research and part II research will next be described and analyzed. In the part I research cafés, pastry shops and bakeries were interviewed to be able to analyze the current situation of sweet vegan café and bakery goods. Then, in the part II research the situation at foodservice wholesalers was examined.

4.1 Part I research

Altogether 52 cafés, pastry shops and bakeries participated the part I research. The aim of the interviews was to understand the participants' views and perceptions about the asked topics. Thus, all the results from the interviews are based on subjective answers, and the conclusions are being drawn from them.

38 firms had sweet vegan café and bakery goods in the selection daily. Six of these 38 firms had mostly vegan selection and one firm was fully vegan, i.e. serving only vegan options. Four firms didn't keep vegan options available but were ready to make vegan goods if specifically asked, while ten firms didn't serve any vegan options, not even to order. Table 4 summarizes the availability of sweet vegan café and bakery goods. (Note that the availability assumes that the firms either have vegan options in selection or not, or they make the products to order. Thus, it is assumed here that the firms serving vegan options have those products in the selection all day long, no *'sold outs'* have been taken into account in the study.)

Table 4. Availability of sweet vegan café and bakery goods

Availability of sweet vegan café and bakery goods	**Number of firms**
Not available	10
Not available/made to order	4
Yes	31
Yes, mostly vegan	6

Yes, fully vegan selection	1
Total	**52**

The first questions about the availability of sweet vegan café and bakery goods revealed that there was some variation in the availability even within a same town. Again, since it is not possible to list the exact locations of the firms, the availability is described by regions. In Helsinki metropolitan area the availability was around 93 %, which means there were 13 firms out of 14 serving vegan options. This was the area with the highest availability.

The second highest availability (86 %), was in Eastern/Western/Central Finland where six out of seven firms served vegan options. However, it is important to notice that the number of firms participating was very small and the area covers the country from east to west as well as the central parts. Furthermore, because the firms had been chosen by using the information oriented selection (Flyvbjerg, 2006), it is possible that the firms willing to participate happened to have vegan options in their selections. Third highest availability (80 %) was in Southern Finland, where 12 out of 15 firms served vegan alternatives. Lastly, the lowest availability was in Northern Finland covering also Lapland. The availability was 44 % with only 7 firms out of 16 serving vegan options. Table 5 summarizes the results of the availability by regions.

Table 5. Availability of sweet vegan café and bakery products by regions

Region	Availability*
Helsinki metropolitan area	93 %
Southern Finland	80 %
Eastern/Western/Central Finland	86 %
Northern Finland	44 %
Average availability	**76 %**

*Percentage of firms that served vegan café and bakery goods

Most of the firms made their products by themselves when taking into account also those firms that didn’t have vegan options in selection. Altogether 44 firms made all their products by themselves, while six told they made almost all their products by themselves while ordering some products ready-made. Two cafés bought all their products ready-made. It was common that the cafés bought special products, e.g. raw cakes and gluten-free pastries from wholesalers. Gluten-free baking needs special attention: according to Commission Implementing Regulation (EU) No 828/2014 products containing no more than 20 mg/kg gluten are allowed to be stated as ‘gluten-free’. Thus, the process of making gluten-free products needs special requirements and it is no wonder many cafés wanted to buy these products from manufacturers who focus on gluten-free baking. When taking into account only the 38 firms who kept vegan options available daily, 31 of them made their vegan products by themselves, five made part of their products by themselves and those two firms who bought everything ready-made also had vegan options available.

Seven bakeries made products not only for their own cafés but also for local supermarkets and one of the bakeries also sold their products for local cafés. Considering only vegan products, there were three bakeries selling vegan products for supermarkets and cafés. Rest of the bakeries didn’t sell vegan products for other firms, although two of them had vegan options available at their cafés. The number of firms selling products for others could actually be larger, since there is no data available from 12 firms. Thus, the findings must be considered with caution.

When asked about the demand for vegan products, 19 cafés, pastry shops and bakeries told vegan options were asked daily and they also served vegan products every day. Furthermore, according to 15 firms there was weekly demand for vegan options and 14 of them had vegan options available daily. However, there was one café in the category serving no vegan products, even though they had demand for vegan options. Finally, 18 firms did not have demand or the demand was less than once a month. Although these firms didn’t have demand for vegan products, there were still five firms serving vegan options. Table 6 summarizes the demand for sweet vegan café and bakery goods.

Table 6. Demand for sweet vegan café and bakery goods

Demand for sweet vegan products	Number of firms	Vegan options available daily
Daily	19	19
Weekly	15	14
No demand/less than once a month	18	5

Total	52	38

The demand had increased during the last year in 18 firms and they all served vegan options. The demand had remained same in 24 firms of which 11 had vegan options available, although three of these 11 firms told the demand was still very low, less than once a month. The demand was daily in two places, and weekly in six places. On the contrary, 13 of these 24 cafés and bakeries told there was no demand or the demand was less than once a month and, as already mentioned, they had no vegan options available daily. Finally, there was no data available from 10 firms. These firms contain one fully vegan place, three almost vegan places, five places with vegan options and one place with no vegan options available. The findings can be seen in Table 7. Right column presents the demand for sweet vegan products at cafés, pastry shops and bakeries that served vegan options daily to see how the demand has changed. Note that in the table seldom denotes less than once a month.

Table 7. Changes in demand

Change in demand*	**Number of firms**	**Vegan options available daily**	**Demand for vegan products**
Increased	18	18	Daily: 8 Weekly: 8 Seldom**: 2
Remained same	24	11	Daily: 2 Weekly: 6 Seldom**: 3
No data available	10	9	Daily: 9
Total	**52**	**38**	**38**

*How the demand of sweet vegan café and bakery goods has changed during the past year
**Less than once a month

In the interviews also the selection of sweet vegan products was taken into account, especially how the demand has affected the selection. In 19 places there was daily demand for vegan products and 12 of them had three or more (sweet) vegan options available, while seven had one or two different options. When the demand was weekly, 15 places, the number of vegan options available decreased: three places had three or more options, 11 places one or two options and one place didn’t serve anything vegan.

Likewise, when there was no demand or the demand was less than once a month, 18 firms, none of the firms served three or more vegan options, five had one or two options and 13 didn't serve vegan options at all, as summarized in Table 8.

Table 8. Demand vs. vegan options available

Demand	**Number of firms**	**Sweet vegan options available**
Daily	19	3 or more options: 12 firms 1-2 options: 7 firms No options: 0 firms
Weekly	15	3 or more options: 3 firms 1-2 options: 11 firms No options: 1 firm
No demand/less than once a month	18	3 or more options: 0 firms 1-2 options: 5 firms No options: 13 firms
Total	**52**	**3 or more options: 15 firms** **1-2 options: 23 firms** **No options: 14**

Besides vegan options, the cafés and bakeries were also asked about other special dietary products they had. The most common special dietary requirement all the firms had taken into account was gluten-free diet: altogether 51 places told they had gluten-free options available daily and in one bakery gluten-free options were available to order. 45 firms served dairy-free options and 44 firms had egg-free options. These numbers include the vegan options as well, since the vegan products don't contain any dairy or eggs. Furthermore, 17 firms specially mentioned they served lactose-free products, and one place had products low in lactose available.

Now, it is important to remember that there were 38 cafés, pastry shops and bakeries with vegan products in selection daily, thus there were also firms with no vegan options but with options free from dairy and/or eggs still available. When considering only the places with no vegan options available or vegan options available to order, there were 14 such firms in the study. Even though they didn't have vegan options in selection, four of these firms served both dairy-free and egg-free products, but those products were different ones. So, they didn't have a single product that would have been free from both dairy and eggs.

The cafés and bakeries were also asked how they manage their food waste and what they do for any leftover products. These were more general questions regarding the whole selection, not only vegan options, as the objective was to see if there were any differences between regions or were there certain types of firms that had similar ways to manage food waste. How firms selling vegan options take food waste into account? Are there any differences compared to firms not having vegan alternatives in selection? Multiple ways to deal with food waste and products not being sold during a day were mentioned, see Table 9.

Table 9. Ways firms manage food waste and products not being sold

Managing the food waste	**Number of firms**
Demand forecasting	8
ResQ Club (food rescue service)	8
For charity	7
Sold at discount the next day	7
For staff	5
Sweet goods can be sold the next day	5
Cannot be utilized	3
Sold at discount during the last hour	2
Can be reused	1
For marketing	1
No data available	5
Total	**52**

Most of the firms told they try to avoid food waste as much as possible. Indeed, there were only three firms that told the unsold products cannot be utilized and thus need to be thrown away. No single way was more common than others and some firms also used multiple ways at the same time, although Table 9 only lists each firm once. Furthermore, even though demand forecasting was specifically mentioned in eight firms as a way to reduce and prevent food waste, it can be assumed that demand forecasting is part of every single firm's daily operations. It just wasn't mentioned as a way to handle the food waste separately by other firms.

Finnish food rescue service, ResQ Club, stood out from the answers and altogether eight firms told they used the service daily to prevent unnecessary food waste. The idea of the rescue service is that restaurants, cafés and other food service actors can sell quality surplus food at discount (ResQ Club, accessed 18.2.2018). Customers using the ResQ service can then discover the best offers and buy the meals by their phone or online and pick up the meal at the restaurant the same day. The service allows the restaurants and cafés to offer specific portions (e.g. meals, smoothies, stuffed sandwiches, buns, sweet goods, etc.) at a short notice.

Seven cafés and bakeries told they give unsold products for charity. There were multiple different kinds of targets of charity including e.g. church, unemployed, big families and elderly people. Two of these firms told they also sold their products at discount the following day and the other firm also gave their unsold products to their customers for free at the end of the opening hours to make sure nothing needs to be thrown away. In addition seven firms told they sell products at discount the next day, usually in big batches.

In five firms the staff was allowed to take with the unsold products at the end of the day. As popular was to sell sweet goods the following day. These cafés had the types of sweet goods that could be sold during couple of days to prevent food waste. Also, they all told that the staff could take the goods with them if not being sold but there were usually just one or two products left. In general, the number of firms telling the staff could take the products with them can be larger but for five firms this was their only way to prevent food waste.

Three cafés and pastry shops told the leftover products must be thrown away and cannot be utilized in any ways. Two cafés sold final products at discount during the last opening hour, the other gave discount - 50 % and the other - 30 %. There was also one bakery that told the leftover products could be reused in many ways, and thus their food waste was minimal. The other coffee chain couldn’t tell more about what they do for any leftover products but the products were used in marketing.

There was no difference in the management of food waste by regions. Indeed, the different management methods used by the firms were divided evenly by the regions and no other method was significantly more popular in any region. However, the most interesting findings were related to food thrown away: there was one café in Helsinki metropolitan area and one café and one pastry shop in Northern Finland that told the leftover products cannot be utilized in any way. Both of the firms in Northern Finland were located in Lapland. Another interesting finding was that the food rescue service, ResQ Club, was used in other regions in Finland except in Lapland. There was no difference between the other regions in the use of the service (note that it was also used in Northern Finland, excluding Lapland). Although Lapland was not separated as own region in the study, it seems that the firms located in Lapland had more opportunities to improve the management of food waste.

When considering only the 38 firms that had vegan options in selection daily, all the management methods mentioned were used to prevent food waste. Again, none of the method was significantly more popular than any other method, and thus it isn’t relevant to separate the methods used. Nevertheless, there was only one fully vegan firm participating the study and they used the food rescue application, ResQ Club. Overall, all the rescue service users were at least ready to make vegan options if asked or they had daily alternatives for vegans.

Final questions were related to designing the selection and especially what is taken into account when deciding what to keep in selection. The aim of these questions was to understand whether firms that have vegan options available pay attention to different things than firms that do not serve anything vegan. Table 10 presents the findings from all 52 participating firms. The figures are given in percentages to be able to compare the answers. To take an example, in Table 10 the effect of demand was mentioned by 39 % of all interviewees.

Table 10. Factors affecting the selection (all participants)

Factors affecting the selection	Percentage of answers
Demand	39 %
Seasons*	85 %
Customers' wishes	39 %
Versatile selection	37 %
Standard selection	58 %
Changing selection	39 %

*Seasons include seasons of the year and holidays, i.e. what berries and fruits are in season, and what kinds of products are in season

According to all participants the most popular factor affecting the selection was season: seasonal effect was mentioned by 85 % of all firms. Some of the firms emphasized seasons of the year, i.e. they focused on seasonal berries and fruits, while some emphasized the holiday seasons (Christmas, Easter, etc.). But in general both the seasons of the year and the holidays were equally important for most of the firms. The second important factor was standard selection: especially the traditional pastry shops emphasized the importance of their standard products they always keep in selection.

Table 11 compares the findings from all the firms that had vegan options in selection (first column) and those firms that had mostly vegan selection and/or fully vegan selection (second column). Thus, in Table 11 the first column includes the answers of the second column as well. When firms served vegan options, they paid most attention to seasons (87 % of all interviewees). The seasonal effect was more popular than any other factor, although standard selection was the second popular factor with 50 % of all answers.

When compared to the firms that had mostly and/or fully vegan selection, there were some differences. Demand was mentioned by none of the firms, although it can be assumed that demand still affected the selection of all the firms. Seasonal effect (86 %) was as important factor among these firms as with all the firms serving vegan options. The most interesting finding, however, was that these firms paid less attention to standard products in selection, instead they focused on changing selection: 57 % of the interviewees mentioned this factor affecting what products they have in selection. Of course, the number of participants in this category was only seven but the answers indicate there is a difference how they design the selection.

Table 11. Factors affecting the selection (firms with vegan options compared to firms with mostly vegan selection and/or 100 % vegan selection)

Factors affecting the selection	Firms with vegan options** (38 firms)	Firms with mostly vegan selection and/or 100 % vegan selection (7 firms)
Demand	32 %	0 %
Seasons*	87 %	86 %
Customers' wishes	40 %	29 %
Versatile selection	34 %	14 %
Standard selection	50 %	29 %
Changing selection	34 %	57 %

NOTE: Figures indicate the percentages of answers.
*Seasons include seasons of the year and holidays, i.e. what berries and fruits are in season, and what kinds of products are in season
**Firms with vegan options include all the firms serving vegan alternatives, i.e. this category includes also firms with mostly vegan selection and fully vegan selection

Table 12 presents the findings from firms with no vegan options and/or vegan options made to order (first column) and firms with no vegan options available (second column). Again, in Table 12 the first column includes the answers of the second column as well. When firms didn't serve anything vegan or only if specifically asked, there were two factors that were equally emphasized: seasons (64 %) and standard selection (64 %). Moreover, demand was also seen as an important factor with altogether 57 % of all answers and changing selection with 50 % of all answers. Firms that didn't serve anything vegan focused on standard selection (80 %), while the seasonal effect was mentioned by 70 % of all interviewees in the category. Otherwise the answers were scattered evenly between the different factors.

Table 12. Factors affecting the selection (firms with no vegan options and/or made to order compared to firms with no vegan options)

Factors affecting the selection	Firms with no vegan options available/ made to order** (14 firms)	Firms with no vegan options available (10 firms)
Demand	57 %	50 %
Seasons*	64 %	70 %
Customers' wishes	36 %	40 %
Versatile selection	29 %	60 %

Standard selection	64 %	80 %
Changing selection	50 %	40 %

NOTE: Figures indicate the percentages of answers.
*Seasons include seasons of the year and holidays, i.e. what berries and fruits are in season, and what kinds of products are in season
**Firms with no vegan options available/made to order include all the firms that don't keep vegan options available or only make the vegan products if specifically asked.

All in all, there were couple of factors that seemed to affect the selection more than other factors. Seasonal effect was mentioned by almost all firms in every category and there was not a significant difference between the categories, i.e. do the firms sell vegan products or not. Standard selection was clearly more important factor (80 %) among firms that didn't serve vegan options, while the factor was mentioned by only 29 % of firms focusing on vegan selection. Changing selection was the second important factor among firms with most of their products vegan or fully vegan selection (57 %). Instead, other firms didn't pay that much attention to changing selection, although every other firm with no vegan options or only made to order mentioned changing selection as a factor having an effect on the selection.

4.1.1 Summary and analysis of part I research

In general the availability of sweet vegan café and bakery goods was better in Southern parts of Finland than in Northern Finland. Helsinki metropolitan area was the most vegan-friendly region in Finland with the availability of 93 %, while in Northern Finland, including Lapland, the availability was only 44 %. When considering all the other regions excluding Northern Finland, the availability was well above 80 %. Thus, it seems that Northern Finland is lacking behind the other country. The average availability in the whole country was 76 % which means that around three out of four firms had vegan options in selection.

However, it is not enough to focus on the percentages of the availability only. Hence, Table 13 compares the demand and availability by regions. As can be seen, the demand and availability of vegan products resonated in other regions except in Northern Finland, where the availability was much higher than the demand. However, in north both the demand (19 %) and the availability (44 %) were smaller than averages (69 % and 76 % respectively). In Table 13 demand includes both daily and weekly demand for vegan options.

Table 13. Demand vs. availability by regions

Region	Demand*	Availability**
Helsinki metropolitan area	93 %	93 %
Southern Finland	80 %	80 %
Eastern/Western/Central Finland	86 %	86 %
Northern Finland	19 %	44 %
Average	**69 %**	**76 %**

*Percentage of firms that answered vegan products were asked daily and/or weekly
**Percentage of firms that served vegan café and bakery goods daily

While in Helsinki metropolitan area vegan products were asked daily or weekly at 93 % of the cafés, the corresponding demand in Northern Finland was only 19 %. It can be assumed that the demand was lower in north than elsewhere in Finland because of the population: Lapland covers a large area of Finland but the population density is only 2 inhabitants per square kilometer (Association of Finnish Local and Regional Authorities, accessed 1.4.2018) and in north the population in general is less than elsewhere in Finland; in Helsinki metropolitan area the population is growing and the population density is much higher. In Uusimaa the population density is as much as 178 inhabitants per square kilometer, thus Uusimaa is the most densely populated region in Finland (Association of Finnish Local and Regional Authorities, accessed 1.4.2018). It is natural that both the demand and the availability were higher in south due to the population: there are more customers for special products.

Furthermore, in Northern Finland, especially in Lapland, the cafés and bakeries are more traditional than in Helsinki and Southern Finland where there are even cafés with fully vegan selections. One reason for the lower demand in north is older population: young professionals move to south. While there are firms with no vegan options, vegans most probably will not visit those places. Rather they will search for vegan options and if not available, there is no demand.

Interestingly, the availability of vegan products in Northern Finland was higher than the experienced demand. The reason for this phenomenon can be derived from the interviews: there were three firms that didn't have anything especially directed to vegans. Instead, they had products free from dairy, eggs and other ingredients of animal origin and those products were suitable for vegans as well. So, in north there is not necessarily products designed especially for vegans but the products made for persons with special dietary requirements and allergies are usually suitable for vegans depending on the ingredients used.

Again, when looking at the situation in whole Finland, the demand for vegan products was daily in 19 firms (37 % of all participants), weekly in 15 firms (29 % of all participants) and there was no demand or the demand was less than once a month in 18 firms (35 % of all participants). All the 19 firms with daily demand had vegan options available but what is interesting is that not every firm with weekly demand served vegan options. One café didn’t serve anything vegan although there was demand for vegan options. Their reasons were small kitchen where the products were prepared and all their products contained milk in some form, thus they didn’t provide vegan alternatives. Yet, when there was no demand or the demand was less than once a month (18 firms), five firms still had vegan options available daily. Three of these mentioned they served vegan products, while two had products free from dairy and eggs and these products were also suitable for vegans, although these firms didn’t focus on vegan products specifically.

The demand also affected the selection of cafés, pastry shops and bakeries: the more demand for vegan products, the more vegan options available. When the demand was daily, all firms had at least one vegan option available and most of them had three options or more to serve. When there was weekly demand, most of the firms had one sweet vegan product available daily and the amount of firms serving three or more options had decreased from 12 to three and there was also one firm with nothing vegan available. When the demand decreased more or there was no demand at all, only five had one or two options to serve, while others didn’t have any vegan alternatives available.

There was no logic among the firms serving daily vegan options. The group consisted of both traditional cafés and bakeries as well as modern, vegetarian and even fully vegan cafés. Furthermore, not only small local cafés had vegan options available daily but also the two coffee chains served vegan options. The chains had same selections everywhere in Finland and they both can be found from south to north.

It was common to prepare the vegan products by the cafés and bakeries themselves. Actually, 31 out of 38 firms (i.e. those with vegan options in selection) told they made their vegan products by themselves, while five bought part of their selection ready-made, e.g. raw cakes and gluten-free pastries. Only two cafés bought everything ready-made, including the vegan café and bakery goods. So, it was most common to prepare everything by the cafés and pastry shops by themselves. However, there still were ten firms (19 % of all participants) with no vegan options available, not even if specifically asked. The reasons behind were that there was no demand and thus the vegan products were thrown away (mentioned by two firms). Also, at many traditional cafés there was clearly a shortage of knowledge what comes to vegan baking, as there were multiple firms in Northern Finland with no vegan products available because they argued that it was not possible to bake cakes and other goods without eggs and dairy. They also wanted to make everything by themselves and not to use ready-made products.

Most of the firms tried to avoid food waste as much as possible and only three firms (6 % of all participants) told the unsold products couldn't be utilized and needed to be thrown away. Multiple ways to manage food waste were mentioned but no method was significantly more popular than any other method. However, the study assumes that demand forecasting was taken into account by every single firm, although only eight firms specifically mentioned demand forecasting as a method to deal with food waste and unsold products.

One of the aims of the questions related to managing the food waste was to see if there were some differences between the regions or types of firms. The methods used were similar all over Finland, except in Lapland: there were no cafés or pastry shops that used the food rescue service, ResQ Club, although the service was used elsewhere in Northern Finland. When considering firms serving vegan options (38 firms), no method was significantly more popular than any other method. However, it was found out that the food rescue service was typically used by firms that were at least ready to make vegan options if asked or they had daily options for vegans available.

The most popular factor affecting the selection of café and bakery goods was season: seasonal effect was mentioned by 85 % of all 52 participating firms. The second important factor was standard selection (58 %). When considering firms with vegan options in selection, the seasonal effect was slightly more important, 87 %, while the importance of standard selection was 50 %. Again, firms with mostly vegan selection or fully vegan selection also paid most attention to seasons (86 %). The biggest difference, however, was that their selections changed the most: 57 % of the interviewees mentioned changing selection as the most important factor. Instead, these firms paid least emphasis on standard selection (29 %).

Firms that didn't serve anything vegan or only if specifically asked found seasons (64 %) and standard selection (64 %) the most important factors affecting the selection. Firms that didn't serve anything vegan focused on standard selection (80 %), while the seasonal effect was mentioned by 70 % of the interviewees in the category. Thus, the two main differences were related to standard selection and changing selection: firms focusing on vegan options emphasized the changing selection and more traditional firms focused on standard selection.

As such, the fundamental problems and challenges are related to the availability of sweet vegan café and bakery goods. In north, it is more challenging to find vegan products than in south, as the availability is much lower than the country average but, on the other hand, so is the demand as well. At some cafés there still is some demand, although the demand is very low and occasional, but no vegan alternatives are available. Interestingly, there still were five cafés and pastry shops with no demand or very low demand serving vegan options. They had understood that vegan products were suitable for people with intolerances and allergies as well, thus it was profitable to keep vegan options in selection.

The availability can be analyzed by using a product life cycle (PLC) concept illustrated in Figure 7. Typically the concept has been used for analyzing firms' marketing strategies (Polli & Cook, 1969) and how PLC affects the business strategy (Anderson & Zeithaml, 1984). However, in this study the PLC concept is used for analyzing the life cycle of vegan café and bakery goods from the perspective of cafés and pastry shops and how the firms react to vegan products. While there are firms that consider vegan products as novelties with no need to react to, there are also firms that have taken these products part of their selections permanently. It seems that especially many traditional cafés and bakeries are still waiting for the demand to grow until they will react. Thus, these firms may see the vegan products still being in the introduction stage at the market: demand is uncertain, volume is small. On the contrary, firms that already have vegan options in selection see vegan products being located in the growth stage of the PLC concept, as many of the firms emphasized the increased demand for vegan products. Although the PLC concept assumes that every product has a stage where the sales start to decline, this study doesn't put emphasis on that. Instead, it seems that the vegan products are more likely to reach a point where they are commonly available at cafés and pastry shops.

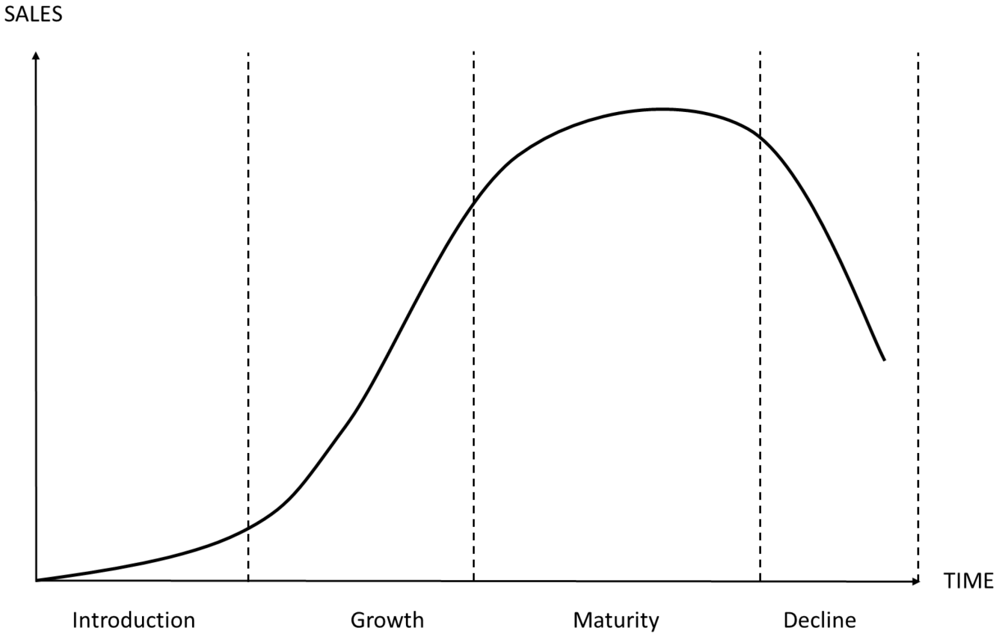

Figure 7. Product life cycle (Polli & Cook, 1969; Bayus, 1994)

Furthermore, there was certainly a lack of knowledge at some firms what comes to vegan baking. Two cafés and pastry shops mentioned they needed to throw vegan options away because there was no demand. Other firms clearly didn't know how to bake vegan goods, and thus couldn't have them in selection, as they didn't want to buy anything ready-made. Yet, these firms had products free from either dairy or eggs but nothing vegan available.

4.2 Part II research

Altogether five food service wholesalers participated the part II research. Even though one of the firms was contacted twice, interviews with both southern and northern locations, the firm is handled as one firm only. Besides, it is important to notice that all the participants had several locations and their operations covered the whole of Finland.

Since the participating wholesalers were the major actors in the foodservice sector, their customers consisted of not only professionals in the HoReCa sector (i.e. hotels, restaurants, catering) but also nationwide chains, public enterprises, schools, hospitals and elderly care as well as grocery stores. One firm told they also had customers in the food industry to whom they sold ingredients, i.e. “raw materials”. When asked about the percentage of cafés of all the customers, the figures were around 5-10 %, which indicates that the importance of cafés is not significant for the foodservice wholesalers. Typical purchases cafés make include products from sweet to savory pastries, beverages, fruits, vegetables, smoothies, dairy and meat. Also non-food items are purchased. When it comes to sweet cakes and pastries all the products are mainly frozen, either raw, pre baked or baked.

When planning the selection, all the participating wholesalers emphasized the importance of their customers. In general, customers were listened to and the products were selected according to the customers, i.e. what customers want and wish to buy. One of the firms told they only had products the customers had chosen in the selection, and they didn’t take any other products to their selection if not asked by their customers. Thus, they were different than other wholesalers, as they didn’t try to sell anything to their customers, instead the customers were those who decided the selection. They also had a limited number of products available when compared to their competitors. Other factors affecting the selection included trends, product quality, diversity of the selection and the suppliers’ selections.

The number of vegan products in the wholesalers’ selections has increased significantly during the past two years. All the participating firms told the demand for vegan alternatives began to grow in 2016. The number of vegan products is still growing, although the volume of vegan products of sales is not significant. However, new vegan alternatives are being developed all the time and according to one interviewee the vegan products have started to find their ways to the customers’ lists permanently. Also, customers ask for new products and they are interested in trying novelties.

Typically many wholesalers also have some own production or they have private labels aimed at foodservice professionals. The participating firms were not an exception: three had private labels with a variable selection of products, while one firm had only a small own label consisting of raw materials. As such, there was only one wholesaler with no own label at all, although they had own production at some level: they produced salads. Also, one of the firms with own label had vegetables and fish products in their own production.

Although vegan products were commonly available in the selections of the wholesalers, these products were not common in private labels. Only one firm had several vegan alternatives in their label and they also had sweet vegan café and bakery goods included. One firm had only one vegan product in their own label available but no sweet or savory pastries were vegan in the label. Other three firms didn't have sweet vegan café and bakery products available in their own label and/or production nor did they have plans to increase the amount of vegan products in their labels and/or production. All in all, the firms were satisfied with the current availability of own vegan products and no one saw they should increase the number of vegan products in their own labels. Although one of the firms did not have own vegan products currently available, they were ready to take vegan options part of their own label if necessary. Besides, one interviewee told if some product is vegan that will more likely add value to the product. Thus, they though it would be better not to have own vegan products, as the products would be better selling if they belonged to a well-known supplier's label.

Among the participating firms collaboration with suppliers and customers was mainly related to the production of own labels. The wholesalers that had private labels had collaboration with their suppliers. Also, one of these three firms told they have nowadays more collaboration with customers as well, especially when developing new products: customers are more and more involved in the product development process. One firm did not have special collaboration with suppliers but they emphasized the collaboration with their customers, since the customers were the ones who decided their selection and what products to be included in the selection. Finally, one of the participating firms told they usually cooperate more with smaller suppliers.

The demand for vegan products has increased considerably during the past two years, as stated by all the participants. The demand is also growing all the time. Veganism is nowadays a trend and customers keep asking for vegan alternatives and are also willing to try new products. According to the interviewees the demand has started from the Helsinki metropolitan area, where the demand is the highest. However, the demand for vegan products has grown in other larger cities and especially in cities with universities. On the contrary, the demand is not notable in the countryside.

Question related to the availability of vegan products among suppliers separated the participating firms into two groups: three firms were happy with the availability while two firms found some problems. The problems with the availability were related to ordering larger amounts and also finding good quality products. In general, there was more variation in the quality of vegan products than in non-vegan products. Furthermore, according to the firms the demand started to grow before new products were developed, and thus the development of new vegan products is lacking behind. This is untypical for other product categories, as usually the products are first being developed and then marketed to customers. Now the customers and especially the end customers, i.e. consumers, were awake and started to ask for vegan options. Also, one problem with vegan products is that although the demand has increased there is no mass consumption for the vegan alternatives yet. This has affected the selection of vegan products as well, and thus the selection at suppliers is smaller than in other product groups. However, the availability was found to be better nowadays than earlier and the availability is getting better all the time.

The supply chain of sweet cakes and pastries did not differentiate from the supply chains of other product categories. However, since almost all the cakes and pastries are frozen products, continuity of the cold chain must be ensured. Furthermore, the interviewees commented that especially the cakes are fragile and thus they must be handled carefully. The supply chain of vegan cakes and sweet pastries didn't stand out from the other supply chains.

As already described, the amount of cafés as customers was not significant for the wholesalers. When asked about the coffee chains, there were two wholesalers that told they didn't have any chain customers, while three had coffee chains as customers. In every single case the coffee chains (like other chain customers as well) placed their orders individually. No centralized ordering was possible due to the systems used. As such, there was no difference when compared to private cafés.

According to the interviewees the wholesalers don't invest in marketing of vegan products. There was only one interviewee who told they agreed on the marketing of vegan products case-by-case with suppliers. Other four wholesalers didn't especially market suppliers' vegan products. One firm separately emphasized that the volume of vegan products of sales is marginal and thus there is no need to market vegan products at the moment. According to the wholesalers the approach towards marketing varies by suppliers. There are suppliers that don't particularly invest in marketing vegan products, while others have started to invest more and more in marketing due to increased selection and higher demand. It is common that the suppliers themselves market their own products and the wholesalers sell market space for them. The participating firms all had their own publications, magazines, web pages, fairs etc. where the suppliers have a possibility to market their products.

The knowledge towards veganism has increased, as stated by the participating firms. Customers who ask for vegan alternatives and products are conscious and they know what they want. Thus, as told by one interviewee, selling vegan products is easier. In general, the word *vegan* is widely known, although there still are plenty of customers who do not have the knowledge about veganism and they are not interested in buying vegan alternatives. Usually, the customers who buy vegan products have interest towards vegan products or their customers have asked for vegan options. One of the participating wholesalers emphasized that it is the end customer, who eventually makes the buying decision. Also, the marketing is directed more to end customers than to cafés.

Typically the customers can find vegan products from the wholesalers' selections by searching with a word *vegan*. One of the interviewees explained they had own category for vegan products with well-known brands and labels. This makes the customer's job to find vegan alternatives easier as there are also multiple products that are not easily recognized to be vegan, e.g. butter, oil and margarine. However, other firms didn't have a separate category for vegan products, since the volume of vegan products was not significant enough. One firm told they always write the word *vegan* in front of every product name if the product itself is not normally vegan, e.g. buns, muffins, cakes, etc. Furthermore, usually cafés collect information from suppliers about vegan products and where to find them.

4.2.1 Summary and analysis of part II research

The importance of foodservice wholesalers is significant in Finland. According to Finnish Grocery Trade Association in 2015 there were 20 355 professional kitchens in Finland serving 868 million meals for their customers each year (Finnish Grocery Trade Association, accessed 29.3.2018). Furthermore, the social impact cannot be underestimated: each day every other Finn uses the services of HoReCa professionals.

The customer base of the wholesalers participating the study consisted of HoReCa professionals, i.e. hotels, restaurants and catering, but there were also public enterprises as well as grocery stores and actors from the food industry. However, the number of cafés of all customers was not notable, around 5-10 %. Three wholesalers had coffee chains as their customers but the two other wholesalers didn't have any coffee chain customers. Typically the cafés purchased frozen sweet cakes and pastries that were raw, pre baked or baked. As such the supply chain of cakes and other sweet goods did not significantly differ from other supply chains, only the continuity of a cold chain is in an important role.

Factors affecting the selections of the participating wholesalers were trends, product quality, diversity of the product range and the suppliers' selections. However, the most important factor was a customer: in all cases the customers were the main influencers. Interestingly, the factors affecting the wholesalers' selections differentiated considerably from the factors affecting the selections of cafés and pastry shops: among the cafés, pastry shops and bakeries the most popular factor was season, which was mentioned by 85 % of all the participants. Since the wholesalers are bigger actors in the field with multiple items in the selection, following the seasons is not as easy as it is for cafés, bakeries and pastry shops. Adjusting the selection for seasons is also crucial for smaller cafés, as customers want to have seasonal products, i.e. Easter, Christmas, Halloween, summer, fall, winter, etc. Also, the cafés typically utilize the seasonal ingredients, e.g. berries and fruits.

During the past two years the amount of vegan products has increased significantly in the selections of wholesalers and the amount is still growing. Also, as the demand for vegan alternatives has increased, customers are more interested in trying new vegan products. Nevertheless, only two cafés (4 %) bought everything ready-made, while it was more common to buy special products ready-made, e.g. raw cakes and gluten-free pastries. Of course, it is important to recall that the answers of the participating wholesalers include all their customers, not only cafés.

The demand was the highest in Helsinki metropolitan area and in larger cities, while in countryside the demand was minimal. This corresponds with the part I research as well: both the demand and the availability was the highest in Helsinki metropolitan area with the figures being 93 % both. According to the interviewees there are more specialized cafés in Helsinki and also more customers who ask for vegan alternatives. Furthermore, when compared to the demand and the availability in Northern Finland, the corresponding figures were only 19 % and 44 %, respectively. Since there are less large cities and towns in north, this resonates with the findings of part II research.

Although the main focus of the participating firms was on purchasing and logistics, they usually had own private labels consisting of a wider or a narrower selection of products or even own production at some level. However, vegan products were not common in the private labels nor in the own production. Collaboration with suppliers was especially related to product development. Also, customers were more and more involved in the development process nowadays.

Three wholesalers were happy with the availability of vegan products at suppliers while two had encountered problems. The problems were related to ordering larger amounts, product quality and the selection. Also, due to the newness of vegan products, there is no mass consumption and the product development is lacking behind. All in all, according to the participants the availability is getting better all the time.

Since wholesalers are companies with the focus on purchasing and logistics, the suppliers are the ones who invest in marketing. Furthermore, especially in vegan products the marketing has been directed to end customers, not to cafés. As such, many times the customers' customers, i.e. the end customers, have first asked for vegan alternatives or special vegan products. Nevertheless, the wholesalers also have paid attention to vegan products in their selections by making it easier to find vegan alternatives. All in all, there were no significant differences between the participating firms.

5 Discussion and conclusions

First, the main findings of the study are reviewed. Second, theoretical perspective is combined to the analysis and the findings are further discussed. Third, the proposed solutions are introduced and managerial implications are discussed. Finally, reliability and validity of the study are evaluated and future research subjects are suggested.

5.1 Main findings

The first two research questions were the following:

How general is the availability of sweet vegan café and bakery goods in Finland and can there be found some common characteristics among firms serving vegan options? Why other firms do not serve vegan alternatives?

What are the main challenges and opportunities related to current supply chain of sweet vegan café and bakery goods?

In Finland the availability of sweet vegan café and bakery goods varies by regions. In general the availability has increased but there still is a notable difference when compared the availability in south to the situation in north. Also, the number of vegan products in the selections of wholesalers has increased. This all indicates that the customers of wholesalers are more interested in taking vegan options as part of their selections. Although the wholesalers nowadays have more vegan options available, the number of vegan alternatives in their private labels is limited. However, the availability is not always sufficient. Although the availability has increased significantly, there are problems especially in the suppliers' selections, i.e. ordering larger amount, product quality and the variety of selections. Also, there is no mass consumption and the product development is lacking behind.

The demand for vegan products has increased significantly during the past two years. Typically demand and availability go hand in hand and the highest demand can be found in Helsinki metropolitan area. The second highest demand is in other large cities and cities with universities, while the demand in countryside is minimal. It is very common that the higher the demand, the more vegan options the firms have in selection.

In general, the attitude cafés have towards ready-made products is quite negative, as most of the cafés want to bake their products by themselves. Only special products, e.g. raw cakes and gluten-free pastries can more often be bought ready-made. Although some traditional cafés, pastry shops and bakeries have a shortage of knowledge about vegan baking, they are not interested in buying products from wholesalers. Thus, it is obvious that the role of wholesalers is not crucial for cafés and pastry shops. Also, the importance of cafés for the wholesalers is not significant: in the study only 5-10 % of all customers were cafés.

The cafés, pastry shops and bakeries serving vegan options did not seem to have any special characteristics that would have differentiated them from other firms. However, there were certain similarities that indicate those firms are more open to new trends and food innovations. While the most common factor affecting the selection of all firms was season and the second important factor was standard selection, the corresponding factors among firms focusing on vegan selection were season and changing selection. Instead, the standard selection was not emphasized. As such, the findings indicate that the more firms focus on vegan products, the more variation they have in selection. Furthermore, many traditional firms still see vegan products as novelties with no need to react to. Thus, vegan products are seen being in the introduction stage at the market with uncertain demand and small volume.

Another notable thing among the cafés serving vegan options is related to managing the food waste: the study found out that the cafés that served vegan options or were ready to make vegan options if asked were typical users of the food rescue service, ResQ Club. Although the application can be used anywhere in Finland, most of the users are located in south. There were only a few users in north and east. For example, the participating cafés, pastry shops and bakeries in Lapland did not use the service.

When talking about supply chains, marketing of vegan products cannot be underestimated, as marketing is an important factor and it eventually affects the demand for vegan products. In general, the marketing of vegan alternatives is not significant among wholesalers and suppliers, since the volume of vegan products of sales is still marginal. Furthermore, the approach towards marketing varies by suppliers but typically the suppliers pay more attention to their novel products. Also, as the demand for vegan options has increased, the suppliers have started to invest more and more in marketing vegan products. Still the marketing is directed more to end customers, not to firms.

Collaboration with other firms was not emphasized by the participating cafés, pastry shops and bakeries. However, the collaboration with suppliers and customers was one of the main themes when interviewing the wholesalers. Typically the wholesalers that have private labels have collaboration with their suppliers, i.e. the manufacturers of their products. Some wholesalers have partner suppliers with whom they have more collaboration. Also, the collaboration with customers has increased nowadays, especially in the product development: customers are more and more involved in the development process. Furthermore, since customers are important for the wholesalers, the collaboration is also related to the planning of the selection.

5.2 Theoretical implications

Although firms in general are focusing more and more on their core activities and the importance of supply chains has increased (Chen & Paulraj, 2004), same cannot be said about cafés, pastry shops and bakeries. There are multiple reasons for that. Firstly, typically cafés are smaller firms driven by families or individual owners. Secondly, the cafés usually operate only in one town unless they are larger chains, although even Finnish coffee chains operate nationally only. As such, the firms don’t have to put that much effort on building supply chains, as they usually don’t have operations abroad. Also, their operations are not that wide when compared to firms from other industries. Of course, the coffee chains with nationwide operations definitely need SCM practices and their work for developing SCM cannot be underestimated.

When considering the wholesalers, the collaboration with suppliers and customers has an important role. As described by Cao & Zhang (2011) collaboration with other firms is a prerequisite for building an efficient supply chain. Thus, it is not surprising that wholesalers invest in collaboration and building partnerships with their suppliers and customers. The cooperation allows the wholesalers to better respond to the market needs (Stank et al., 1999).

As stated by Cooper et al. (1997) the closeness of relationship varies at different points of the supply chain. Thus, it is obvious that the wholesalers focus on certain suppliers and building closer relationships with them. Besides, collaboration requires commitment (Barrat, 2004) and when focusing only on a limited number of relationships, there are better conditions to succeed. The reduced supplier base allows closer integration between the firms (Cooper & Ellram, 1993). Furthermore, typically the relationships in a supply chain are long-term, thus the firms must pay attention to trust and mutual dependence as well. These together with commitment enhance the implementation of SCM tactics.

Moreover, in today's dynamic world establishing supply chains allows the firms to better respond to customer needs (Cooper & Ellram, 1993; Vonderembse et al., 2006). Still, the cafés and bakeries are not interested in building closer relationships with other firms. It can be assumed that the cafés and bakeries don't need to put effort on building supply chain practices, as they can respond to the customer needs quickly and typically many traditional cafés and bakeries have regular customers. However, the formation of supply chain arrangement allows firms to lower costs, improve customer value and satisfaction as well as competitive advantage (Li et al., 2006; Mentzer et al., 2001).

It may not be that clear for the cafés, pastry shops and bakeries but every organization is a part of multiple supply chains (Mentzer et al., 2001). As such, cafés also belong to at least one supply chain, since supply chains always exist, no matter how they are managed. To take an example: the most straightforward supply chain consists only of a company, a supplier and a customer. Thus, the café is the focal company and it has suppliers for its raw materials as well as customers. It is not always that straightforward, as usually the supply chain consists of a network of multiple businesses and relationships (Lambert & Cooper, 2000).

Cafés, pastry shops, bakeries and food service wholesalers all operate in food service sector and they are all part of food supply chains. Certain characteristics differentiate the food supply chains from other supply chains including continuous and significant change in the quality of food products throughout the supply chain (Yu & Nagurney, 2013). One of the main characteristics, however, is high perishability. The perishability concerns all the food products and thus the firms need to deal with managing food waste.

The customer base of the participating firms differs by firm types. In food service wholesaling the customer base consists of business customers, e.g. cafés, hotels, restaurants, catering and public enterprises, while the cafés typically serve the final customers. The pastry shops and bakeries have both business and final customers. According Bourlakis & Weightman (2004) the customer base defines the line for strategies and operations of the firms: wholesalers focus on the product availability and cafés focus on the needs of the end customer. Finally, the ultimate goal of the food supply chain is to serve and respond to the needs of the end customer. Overall, the food marketplace is consumer-driven (Asp, 1999).

According to Asp (1999) the lifestyle factors express identity and their importance is higher than ever. Veganism, for example, is a lifestyle, but also a trend. Especially nowadays different food trends have a huge effect on the food choices consumers make. Vegans usually express themselves with food. The reasons for being a vegan are diversified including e.g. environmental, ethical and health reasons. Thus, food is not only a low involvement product, instead it can be seen as a high involvement product evoking strong emotions (Bourlakis & Weightman, 2004).

5.3 Managerial implications

The third research question was the following:

> *How to improve the availability of sweet vegan café and bakery goods by developing supply chain management and collaboration between firms?*

The objective of the proposed solutions is not only to improve the availability but also to increase the demand. Furthermore, due to high perishability of food products in a food service sector, the study also provides recommendations how to decrease the food waste. Thus a best practice for managing the food waste is included. The proposed solutions are:

- ✓ By expanding the selection to include vegan options the firms will be able to serve customers with special dietary requirements and as such to expand their customer base.
- ✓ Collaboration with wholesalers will enable the cafés to meet the customer needs more efficiently.
- ✓ Collaboration in product development process will enable the cafés to participate the design and planning of the selection of wholesalers and thus bring the know-how of customer needs from the field.

- ✓ When serving vegan products, having the products on display will not only increase the sales of vegan options but also decrease the food waste.
- ✓ When a café fulfills the selection with products by a well-known supplier, it is advisable to market the products.
- ✓ ResQ Club is suggested as a *best practice* for managing the food waste.

Obviously there is a need to improve the availability of sweet vegan café and bakery goods, since not all the cafés, pastry shops and bakeries have realized the opportunities selling vegan options will bring to them. Although the demand varies by regions, the demand certainly has increased significantly during the past two years. Also, the figures published by Kesko (Kesko, press release 9.6.2017) related to the sales of vegan products indicate the growth. There are already cafés and bakeries that have taken vegan options part of their selections permanently. By expanding the selection to cover vegan options the firms will have more possibilities to serve customers with special dietary requirements.

Special dietary requirements and different diets in general have become more popular. Although there are numerous special diets people follow, the most popular and in some cases the only at cafés and bakeries is gluten-free diet. As such, gluten-free alternatives will most likely be found at every café, pastry shop and bakery in Finland. Also, the selection of gluten-free products at wholesalers is comprehensive. However, serving gluten-free products is not enough anymore, as customers want more variety. For that, most of the firms have included products free from dairy and eggs in their selections but vegan products represent the minority.

Vegan products can actually improve the selection and the variety of special dietary products at many cafés and bakeries. The reason for that is simple: vegan products do not contain any dairy, eggs or other ingredients of animal origin. Thus, they are also suitable for people suffering from food intolerances and allergies. By including vegan options in the selection the firms won't need to worry about lactose-free or low in lactose products, as there is no dairy or lactose in the vegan options. Nor they need to come up with special recipes without eggs to be able to serve people with egg allergy. In general, the firms should more actively use the information available on prevalent trends and customer needs and not to be afraid of changing the selection.

According to the literature every firm is part of a supply chain, although not always that obvious. Furthermore, since firms are paying more attention to their core activities, the importance of supply chain management has increased (Chen & Paulraj, 2004). As such, when a café or a bakery is not familiar with baking vegan cakes and other pastries, they don't need to bake those by themselves. There will always be firms that have specialized in vegan baking and the number of vegan options at wholesalers is growing. Besides, cafés do not need to do everything by themselves: indeed, collaboration with other firms is a key for an efficient supply chain (Cao & Zhang, 2011).

Collaboration with wholesalers will enable the cafés to meet the customer needs efficiently, as SCM integrates the suppliers, manufacturers, distributors and customers across the supply chain (Cooper & Ellram, 1993; Vonderembse et al., 2006). One of the possibilities to collaborate with wholesalers is to cooperate in the product development process. Since there are multiple cafés without enough know-how of vegan baking and since they are not interested in baking vegan goods, they could collaborate with wholesalers and together develop vegan products for wholesalers. This would be a win-win situation for both firms, as cafés know what customers want and the cafés in turn are customers of wholesalers.

In general, the cafés could more often use the selections of wholesalers, as there are multiple food service wholesalers operating in Finland and they have several locations that cover the whole country. Also, the number of vegan products at wholesalers have increased during the last two years and the number is still growing, which means that cafés and other firms will have more vegan options to choose from. However, since the vegan products are not that common in the private labels of wholesalers, the collaboration with cafés would bring more opportunities for wholesalers as well. By investing in collaboration with cafés both the number of cafés as customers would increase as well as the collaboration would create new products.

When serving vegan products, it is important not to keep the products in freezer, if only possible. Instead, the products should be on display with other products so that customers have a possibility to choose a vegan alternative. There were two firms participating the part I research that told vegan products were thrown away due to low demand. Especially in smaller towns the cafés should think about whether to mark the vegan products or not. If the products are marked as "vegan", there will most likely be customers who won't choose those products then. Instead, if the vegan goods are not marked and they are equivalent with other products, customers will more likely choose vegan options as well, although the customers themselves are not vegans.

Although it is not encouraged to specifically mark the vegan products especially in smaller towns, there are certain exceptions when it would be better to emphasize that the café serves vegan options. When a café buys ready-made vegan products, e.g. raw cakes made by a famous manufacturer, it would be beneficial both for the café and the manufacturer if the café marketed they have the manufacturer's products in the selection. The situation would be a win-win for both of the firms. This, however, requires that the manufacturer has good reputation and is well-known among customers. In a situation like that the meaning of supplier relationships changes as now the café becomes a part of the supply chain of the manufacturer (Iloranta & Pajunen-Muhonen, 2012).

High perishability is one of the main characteristics in a food supply chain, and thus the cafés, pastry shops and bakeries need to pay attention to managing the food waste. By having vegan options on display the waste of those products will be smaller than in a situation where they are sold separately, as when keeping the products equivalent among other products their sales is expected to be larger. Furthermore, it is also important to keep the food waste as minimal as possible. Not only vegan products but also other products thrown away will cause extra costs, as every product thrown away is off sales. Thus, in this study the food rescue service, ResQ Club, is suggested as a *best practice* for managing the food waste and to enable the firms to minimize their waste.

5.4 Limitations and further research

The study has been conducted in a way that the reliability and possible limitations have been considered. Thus, detailed description of the research methods including case selection, data collection and data analysis are provided. All data is represented in the analysis to improve the reliability. Interview protocols are also provided as appendices. Furthermore, the findings are accurately documented and multiple tables are included to illustrate the main findings and to make the findings better understandable.

One of the main objectives in the study was to establish a chain of evidence to further improve the validity and reliability. It is important that anyone could trace the steps of the study and conduct the study again. Of course, it must be recalled that the situation in the field changes quickly and thus it is very much possible that no similar answers are available if conducting the study later. The situation at cafés, pastry shops and bakeries was examined in December 2017 and it can be assumed that the situation has changed since then. Also, the availability of vegan options at wholesalers varies and lives all the time.

There was only one researcher present in the interviews. The study contains a possibility for researcher bias, as the study was conducted by one researcher only. It would have been better for the reliability if there were multiple researchers discussing the data analysis and findings. The presence of multiple aspects could have reduced the possibility of researcher bias. However, without other researchers the study may contain subjective judgements of the researcher.

The participating firms were allowed to stay anonymous to maximize the amount of useful information, thus the anonymity was respected in the study and no names or any other private information about the firms was published. When considering the interviewee bias, it is assumed that the anonymity has reduced the possibility for biased answers. However, it is not fully removed, as the answers are based on individual, subjective perceptions and views of the interviewees.

In the study the interviewees from cafés, pastry shops and bakeries were not specifically chosen. Although the firms were chosen so that they represented a large variety of different types of firms, the interviewees were typically those who answered the phone, i.e. the workers. In some cases the interviewees were the owners of the firms. This, however, was not a problem, as the objective of the part I research was to get a comprehensive view of the availability of sweet vegan café and bakery goods at as many cafés, pastry shops and bakeries as possible. Thus, the answers given by the personnel of the participating firms were enough. Of course, the validity of the study could have been further improved by conducting the interviews with the owners, as they might have had a deeper understanding of the situation in the field.

When conducting the interviews with the representatives of the wholesalers, the interviewees were not always those who were first called. In some cases the interviewees were chosen by the firms. As such, the information collected in the interviews with the wholesalers is more accurate than the information collected in the interviews with the cafés, pastry shops and bakeries. However, there still might have happened mistakes in the analysis of the data, since the interviews were not recorded or transcribed.

The results are applicable to cafés, pastry shops, bakeries and food service wholesalers. With certain caution the results can be expanded to restaurants and hotels as well as other actors in the food service sector. The number of firms was sufficient in south and north but the number of participating firms in eastern, western and central Finland was only seven while the region is large. Thus, the findings from the region must be observed with a certain caution. It could have been better to include more firms from the region to cover the whole country more evenly. One possibility could have been a questionnaire but due to time and resource limitations it was not applicable for the study.

Considering the generalizability of the findings of the study the findings are generalizable beyond the scope of the study. This is supported by the findings of other researchers about the popularity of vegetarian and vegan diets. Furthermore, the press release by Kesko (Kesko, press release 9.6.2017) supports the fact that the sales of vegan products has increased significantly and will continue growing. Thus, the reliability of this study is good both on the case level as well as on the general level.

The study included only cafés, pastry shops, bakeries and wholesalers from the food service sector. Thus, future research is needed to further expand on the results. There is no information available on other actors from the HoReCa sector, e.g. restaurants and public enterprises. Next step would thus be to examine the situation among those firms to see whether there exist any differences and to better understand the value of vegan products in general.

Although the study covered the whole of Finland, the number of firms was not significant in all regions. Thus, there should be a larger sampling of firms for better generalization. Also, in the study the demand for vegan products was based on subjective views of the interviewees and their experiences. For further research it would be better to examine the real demand for vegan products in Finland and what is the number of people following vegan diet.

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Appendices

Appendix 1

Interview protocol for cafés and bakeries

Introduce yourself: who are you and what are you studying. Briefly introduce the topic of your master's thesis. In the study no names of persons and firms contacted and interviewed will be published. The information will only be collected for the part I research and will not be forwarded to third parties.

Firm:

Shortly introduce the firm and its operations (e.g. café, bakery, pastry shop, catering services…):

Interview questions:

1. Do you have vegan café and bakery goods in selection?
    a. Yes
        i. How much with respect to selection of all products?
        ii. Examples of vegan products?
    b. No
        i. Why not?
        ii. Are you going to introduce vegan products into selection?
2. Do you make your vegan products by yourself or do you buy them ready-made?
    a. If you make by yourself, do you also sell vegan products for other firms?
    b. If you buy them ready-made, why so? Where do you buy them?
3. How much do you have demand for vegan products? Daily, weekly, etc. Have you noticed any changes in the demand during the last year? What kind of changes, if any?
    a. How do you see your selection of vegan products: are you happy with it as it is or do you think new products should be introduced? If you don't have any vegan products, do you think they should be added to your selection?

4. Special dietary requirements and allergies: (e.g. gluten-free, egg-free, dairy-free, nut-free, vegan)
    a. What allergies and special dietary requirements have you taken into account in selection?
5. Food waste:
    a. How much food waste comes from the whole selection?
    b. What do you do for the products not sold during a day?
6. Selection:
    a. How do you design selection? What things do you pay attention to? How do the seasons affect?
    b. What is the effect of demand? Do the customers have a possibility to affect the selection and products available?

Thank you for the interview!

Appendix 2

Interview protocol for vegetarian/vegan cafés and bakeries

Introduce yourself: who are you and what are you studying. Briefly introduce the topic of your master's thesis. In the study no names of persons and firms contacted and interviewed will be published. The information will only be collected for the part I research and will not be forwarded to third parties.

Firm:

Shortly introduce the firm and its operations (e.g. café, bakery, pastry shop, catering services…):

First, I would like to know if your selection includes only vegan products or do you also have non-vegan products in your selection?

FULLY VEGAN: Why? What reasons affected your decision to have a fully vegan selection?

➔ Move to question 3.

Interview questions:

1. Most of the products in your selection are vegan. Why so?

2. Not all your products are vegan. Have you been considering having a fully vegan selection? Why so/why not?
3. Do you make your vegan products by yourself or do you buy them ready-made?
    a. If you make by yourself, do you also sell vegan products for other firms?
    b. If you buy them ready-made, why so? Where do you buy them?
4. Have you noticed any changes in the demand during the last year? What kind of changes, if any?
5. Special dietary requirements and allergies: (e.g. gluten-free, nut-free)
    a. Along with vegan diet, what allergies and special dietary requirements have you taken into account in selection?
6. Food waste:
    a. How much food waste comes from the whole selection?
    b. What do you do for the products not sold during a day?
7. Selection:
    a. How do you design selection? What things do you pay attention to? How do the seasons affect?
    b. What is the effect of demand? Do the customers have a possibility to affect the selection and products available?

Thank you for the interview!

Appendix 3

Interview protocol for wholesalers

Introduce yourself: who are you and what are you studying. Briefly introduce the topic of your master’s thesis. In the study no names of persons and firms contacted and interviewed will be published. All information will be treated confidentially and no information can be connected to individual firms participating the study.

Firm:

Shortly introduce the firm and its operations:

Interview questions:

1. Describe customer base.
    a. What is the percentage of cafés of all customers?
    b. Could you specify what typical products cafés buy are?
2. Describe how you design selection.
    a. What things do you pay attention to?
    b. Do you collaborate with suppliers and customers regarding the development of your selection?
    c. How has the number of **vegan** products in your selection changed during the past two years?
    d. Do you have own production?
        i. Do you have **vegan** café and bakery products in your own production? What kind of products?
        ii. Do you have plans to increase the amount of **vegan** products OR to take **vegan** products part of your production? Why? Why not?
3. Tell about the demand for **vegan** products.
    a. How has the demand changed during the past two years?
    b. Are there any recognizable differences in the demand in different areas of Finland? What kind of differences can you specify?
4. Tell about the availability of **vegan** products (when it comes to suppliers).
    a. Is the availability sufficient? Does the availability meet the demand?
    b. How have you ensured the availability of **vegan** products in your selection?
    c. Can you recognize any challenges related to the availability of **vegan** products? What kind of challenges, if any?
5. Describe the supply chain of cakes and other sweet pastries.
    a. Can you recognize any special features related to the supply chain? What kind of features, if any?
    b. How about the features of the supply chain of **vegan** cakes and pastries?
6. Describe the order fulfillment of coffee chains.
    a. How do the coffee chains place their orders? Individually, centralized?
    b. Are there any differences when compared to private cafés? What kind of differences, if any?

7. Tell about marketing of **vegan** products.
    a. Do you market **vegan** products?
    b. How much do the suppliers invest in marketing their **vegan** products?
    c. How well do the suppliers and customers know the term "**vegan**"?
    d. How do the customers find **vegan** products in your selection?
8. Is there something you would still like to say?

Thank you for the interview!